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F. G. SCHAUPP JOHN B. SMITH GEO. H. HULST
CHAS. LOUIS POLLARD R. P. DOW

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& Insects

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BULLETIN
OF THE
BROOKLYN ENTOMOLOGICAL SOCIETY

VOL. VIII OCTOBER, 1912 NO. 1

1878-1912—A Retrospect.

By EDWARD L. GRAEF, Brooklyn, N. Y.
Honorary President of the Brooklyn Entomological Society.

More than a generation ago, or to be exact, in May, 1878, a few members of the Brooklyn Entomological Society, then six years old, prepared and issued the first number of the BULLETIN. It was my privilege to write the first chapter of that publication, and God has spared my life to enable me to introduce the resurrected BULLETIN of 1912.

In glancing over the names of our early contributors one finds many who have since gained high distinction in the entomological world. In fact the publication itself was the stimulus that spurred them on to greater efforts, and for this reason it became one of the most successful of its kind. As an illustration of the valuable matter published, we may mention the synoptic tables of Coleoptera and Lepidoptera. At that time no complete lists of these orders were obtainable, and the tables printed in the BULLETIN were of the greatest assistance to the younger members of the Society.

Dr. John B. Smith, Rev. Geo. D. Hulst and Professor F. G. Schaupp may be said to have begun their entomological careers in connection with our magazine, while its supporters included many members of the older set, such as Dr. Horn, Dr. Le Conte, A. R. Grote, Hermann Strecker, G. H. French and others. Previous to this time our local collectors were scattered and carried out their work independently; their specimens were largely undetermined and were often kept in show frames without any attempt at classification. The Society brought these men together and gave them an opportunity of comparing and naming their specimens, while the interesting facts thus brought out were published.

In looking back over this period I am pained to realize how many well known faces we now miss at our meetings, men like those named above, whose places can perhaps never be filled. However, in resuming the publication of our BULLETIN we start under better auspices than in 1878. The Society is considerably larger and its meetings are well attended. Who can tell what may be the entomological career of our younger and more enthusiastic members? Remember the words of Napoleon—"Every private in the Grand Army carries in his knapsack the baton of a field marshal."

I bespeak a hearty welcome for our new venture, and I think I can promise that members of the Society will do their utmost to make the publication interesting and instructive.

A New Cicada [Homop.] from Plummer's Island, Maryland.

By WM. T. DAVIS, New Brighton, N. Y.

Through the kindness of Mr. W. L. McAtee of the Department of Agriculture, Washington, D. C., I have been able to examine a collection of cicadas made at Plummer's Island, Md., the home of the Washington Biologists' Field Club. In this collection there are fifteen examples of a species heretofore confounded with *Cicada linnei* Grossb. and *Cicada pruinosa* Say. These two very distinct insects cannot be readily told apart by the examination of the male genitalia alone, but the costal margin in *linnei* is more suddenly bent near the middle of the fore wing than in *pruinosa*. They are also very differently marked. The song of *linnei* is a continuous one rising higher in pitch if the insect is energetic, and then gradually subsiding, in this respect somewhat resembling *Cicada sayi*, only it is not so loud and not so impetuous as in that species. *Cicada pruinosa* has a very different song, a *z-zape*, *z-zape*, *z-zape*. These two insects are therefore very far apart in the character of their song.

The cicadas from Plummer's Island, or Winnemanna as the Indians called the region, were collected from 1902 to 1910, and from July 12 to September 24. The majority were collected in August. On two collected August 16, 1907, the song is noted by McAtee as "a high-pitched rising and falling note"; on two of

August 23, 1908, as a "rising and falling note," and on the one of August 16, 1910, as "a low-pitched uniform note." This last insect was probably not fairly under way, for *pruinosa* sometimes only renders a *zing* note not getting up energy enough to *zape*, as stated in *Entomological News* for December, 1910. On September 23, 1911, while on the bank of the canal below Plummer's Island the writer heard a cicada singing that at the time was supposed to be *pruinosa*, but may have been the species here described as new.

Cicada winnemanna sp. n.

Length: ♂ 32 mm., to tip of wings 50 mm.; ♀ 30 mm., to tip of wings 50 mm. Head black, anterior margin between the eyes and an irregular stripe extending from below the central ocellus on to the clypeus green. Pronotum including posterior margin or collar green except the following: two triangular spots each side of the central line, one to three tiny dots near the central area, a spot on each lateral margin and hair streaks in the deeper parts of the channelled surface which are black. The mesonotum has the markings similar to *pruinosa* and *linnei*. The abdomen is black above with the hind margins of the segments more or less fulvous, the second segment having this irregular band broader than the others. There are two white pruinose spots at the base of the first segment, one on each side, also a white streak hardly discernible each side at the base of the third segment, and the usual white spot on each side of the eighth segment. In the female the abdominal markings are far less distinct than in the male and some are wanting. Beneath the abdomen is pruinose, the central area being fulvous with a narrow black stripe that usually does not reach to the end of the abdomen as in *linnei* and *pruinosa*. The edges of the stripe are not as parallel and well defined as in the last two mentioned species. The opercula are as broad as long. The genitalia resemble those of *pruinosa* and *linnei*.

In addition to the types and the thirteen paratypes from Plummer's Island, Md., a single female from Raleigh, N. C., received from Mr. Brimley, is in the collection of the author.

Cicada winnemanna may be separated from *pruinosa* and *linnei* by having the pronotum more green, the hind margins of the abdominal segments fulvous on the dorsal surface, and by the narrower less definite and shorter central black band beneath. The costal margin of the fore wing is curved as in *pruinosa*, and not so abruptly bent near its middle as in *linnei*. It lacks the two broad white dashes at the base of the third abdominal segment so conspicuous in *pruinosa*.

We have not followed Distant in the use of the generic name *Rihana*, for reasons which will be given by Mr. Edward P. Van Duzee in a future paper.

Iphiclides ajax and Eurymus interior [Lepid.] **from the summit of Mt. Marcy, N. Y.**

By F. E. Watson, New York, N. Y., and L. V. Coleman, Brooklyn, N. Y.

On the afternoon of July 15, 1912, after a long climb up the winding trail connecting the town of North Elba with the summit of Mount Marcy, we reached the highest point in the Adirondacks, 5,344 feet.

Although a violent gale was blowing from the south, Coleoptera, Hymenoptera and Orthoptera were quite abundant on the bare rocky peak. Butterflies, however, were scarce, except for the genus Eurymus. Quite a number of these were flying between the tree line and the summit, but owing to the wind and the nature of the ground, only four specimens were captured. These proved to be *E. philodice* 1 male, 1 female, and *E. interior* 1 male, 1 female. In the late afternoon, about four o'clock, while we were enjoying some luncheon on the summit, an *ajax* flew within two yards of us, or rather was blown by and carried down the north side of the mountain.

Shortly before evening we made our way down the mountain to Lake Tear-of-the-clouds, near which we camped for the night, at an altitude of 4,300 feet. The following morning we returned to the summit, which we found completely enveloped in clouds. The haze soon cleared away, however, and by nine o'clock the sun was shining with an intense brightness. It was hoped that the wind, which had changed during the night and was now blowing strongly from the north, would drive the *ajax* back up the mountain. This is apparently just what happened, for about ten o'clock one was captured on the white flowers of a patch of the mountain sandwort (*Arenaria groenlandica*), about two hundred feet below the summit.

Individuals of Eurymus were common, but the northerly gale made it next to impossible to capture any. It was observed, however, that the flowers of the alpine golden rod (*Solidago alpestris*) proved an almost irresistible attraction for them, so that by waiting at a clump of the plant below the summit and out of the wind, thirteen specimens were taken between ten and eleven o'clock, of which 6 were *E. interior*, all males, and 7 were *philodice*, 4 males, 3 females.

At eleven we started homeward, and arrived in the valley just at the close of a storm that had been in progress below us all the morning.

Following is the list of species, with the total number of each observed during the two days spent on the summit:

Iphiclides ajax L. var. *telamonides* Felder	1 specimen
Papilio glaucus L. form *turnus* L.	3 specimens
Pontia rapae L.	1 specimen
Eurymus philodice Godart	Common
Eurymus interior Scudder	Apparently common
Argynnis sp. (*aphrodite* Fabr.?)	1 specimen
Eugonia j-album Boisd. & Lec.	1 specimen
Vanessa atalanta L.	4 specimens
Vanessa huntera Fabr.	3 specimens
Basilarchia arthemis Drury	2 specimens
A single Hesperid, probably *Erynnis sassacus* Harris or *Thymelicus mystic* Scudder.	
Total number of species observed	11

Mr. G. F. Comstock has also captured *Eurymus interior* in the Adirondack region, specimens having been taken in the Marcy marsh and at the summit of Mount Baxter, near Keene Valley (*Entomological News* **14**: 197).

While perhaps out of place in this article, it is of interest to record the capture of a second male specimen of *Iphiclides ajax telamonides* in North Elba along the road to Keene (about 2,000 ft. altitude). This specimen was taken on the flowers of the giant fireweed (*Chamaenerion angustifolium*), on July 17, 1912.

Professor C. H. Peck states that the papaw (*Asimina triloba*), on which the larva of *ajax* feeds, has not been found in this region. The capture of the two specimens of this butterfly is therefore of botanical interest, as indicating the possibility of a station for the papaw in the North Elba region.

We wish to take this opportunity of thanking Professor Peck for naming our plants.

On the tropical American Rhipidiae (Tipulidae, Dipt.)

By Chas. P. Alexander, Ithaca, N. Y.*

The genus Rhipidia Meigen, remarkable in the possession of strongly pectinated antennae in the males of many species, reaches its maximum of specific development in the tropics of the New World.

I have before m over fifty specimens of American Rhipidiae, referable to ten species, all of the described forms being included excepting *bipectinata* Will., *costalis* Will., *bryanti* Johns., *tabescens* End., and typical *subpectinata* Will. The types of *bryanti* are in Boston, and through the kindness of Mr. C. W. Johnson I was able to examine them in December, 1911. In addition to the hitherto known forms, I find among the material four new species and three additional varieties which are characterized in this paper.

All of the known Rhipidiae are referable to three main groups, which seem to be equivalent to subgenera, based on the structure of the male antennae.

(1) The subgenus Rhipidia, constituting the *maculata* group with bipectinate antennae, including the type of the genus, *maculata* Meig., and *bipectinata* Will., *costalis* Will., *calverti* sp. nov., *cramptoni* sp. nov., and probably *bryanti* Johns., and *tabescens* End., these latter known only from the females.

(2) The subgenus Monorhipidia subg. nov., constituting the *uniseriata* group, with unipectinate antennae, including *fidelis* Osten-Sacken, and *unipectinata* Will.

(3) The subgenus Arhipidia subg. nov., constituting the *domestica* group, with subpectinated antennae, including two subgroups,

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*Contribution from the Entomological Laboratory, Cornell University.

subpectinata Will. and its allies, *annulicornis* End., and *schwarzi* sp. nov., and the *domestica* subgroup, with *multiguttata* sp. nov., and *domestica* and its races.

The material studied is the property of the United States National Museum, the American Museum of Natural History, the Entomological Society of Philadelphia, and Cornell University; and I am indebted to Mr. Frederick Knab, Mr. John A. Grossbeck, Mr. E. T. Cresson, Jr., and Dr. J. Chester Bradley for the loan of the material. I wish to further express my appreciation to Mr. Knab for kind advice and assistance in many matters.

Key to the American Rhipidiæ (males only.)

1. Antennae of male bipectinated.................................... 2
Antennae of male unipectinated or subpectinated.................. 6
2. Flagellum with all except the last segment pectinated. (Wings with five costal spots; hind tarsi light yellow.) ....*calverti*, sp. n. (Costa Rica).
Flagellum with the first segment simple; one or more terminal segments simple.. 3
3. Wings nearly uniformly clouded with blackish; stigma dark. (Flagellar segments long, bipectinated; dorsal thoracic stripes not complete; pleural stripe distinct.) ....*bipectinata* Will.[1] (Lesser Antilles).
Wings variegated with spots and dots............................ 4
4. Wings with the spots confined to the vicinity of the veins. (Antennae black; terminal three or four segments simple.) ....*costalis* Will.[2] (Lesser Antilles).
Wings with numerous smaller spots and dots in all the cells........ 5
5. Antennae with shorter pectinations; wings greyish with brown spots; several marks along costal margin. ....*maculata* Meig.[3] (Holarctic region).
Antennae with longer pectinations; wings hyaline with reddish-brown dots sprinkled in all the cells; larger costal marks not present.......................... *cramptoni* sp. n. (North Brazil.)
6. Antennae of the male unipectinated (*uniseriata* group)............ 7
Antennae of the male subpectinated (*domestica* group)............ 8
7. Thorax brown, gray pruinose; wings pale brownish, a whitish blotch in center of the disk; a round brown dot at origin of Rs, fork of Rs and tip of Sc; tarsi brown.... .*fidelis* O-S.[4] (Eastern U. S.)
Thorax yellow; wings with darker clouds along the anterior margin; apices of wings more clouded; posterior tarsi light yellow. *unipectinata* Will.[5]......(Central America; Lesser Antilles).

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[1] Williston, Dipt. St. Vincent; Trans. Ent. Soc. Lond. (1896) 285, pl. 9, fig. 54.

[2] Williston, *l. c.*, 286, pl. 9, fig. 56.

[3] Meigen. System Beschreib. (1818) **1**: 153, pl. 5, figs. 9-11.

[4] Osten-Sacken. Proc. Acad. Nat. Sci. Phila. (1859) 209.

[5] Williston, *l. c.* 286, pl. 9, fig. 55.

8. Mesonotal præscutum broadly edged with pale yellowish-white in front and on sides.................................... 9
Mesonotal præscutum without a broad pale margin............... 12
9. Wing membrane without numerous dots in the cells (*subpectinata*).. 10
Wing membrane dotted with pale brown in all the cells........... 11
10. Antennae yellow; head ochraceous-yellow pleural stripes narrow. ....*subpectinata subpectinata* Will.[6] (Lesser Antilles).
Antennae blackish; segments 12, 13, pale; head gray; pleural stripes broad......*subpectinata pleuralis* subsp. n. (Central America.)
11. Antennae pale, except segments 7, 8 and 14; a large oval brown spot at fork of media......*annulicornis* End.[7] (Trinidad, Colombia)
Antennae dark brown, except segments 12-13; wings without a large blotch as described above....*schwarzi* sp. n. (Greater Antilles)
12. Mesonotal præscutum without conspicuous dark brown marks, unicolorous except behind; wings abundantly dotted in all the cells...................*multiguttata* sp. n. (Central America).
Mesonotal præscutum with darker longitudinal lines; wings with markings large, scanty, confined to the neighborhood of veins (*domestica*).. 13
13. Thoracic præscutum with the middle stripes fused behind into a rectangular blotch. ....*domestica angustifrons* subsp. n. (Ecuador).
Thoracic dorsum with a narrow stripe on either side of the pale ground line.. 14
14. Larger (wing of male 5.7-6.5 mm.); color darker; wings tinged with brown.........*domestica amazonensis* subsp. n. (East Brazil).
Smaller (wing of male 5.4 mm.); color lighter; wings almost hyaline. *domestica domestica* O-S.[8] (Eastern U. S.; Central and Northern ....S. America).

The following species, known only from the females, could not be included in the above key: *R. bryanti* Johns.[9] (Eastern U. S.), probably allied to *maculata*, but in its wing pattern suggesting members of the *domestica* group; deflection of Cu_1 unusually far distad. It is a large, vigorous species, quite distinct from any others that I have seen. *R. tabescens* End.[10] (Western Brazil) has a wing pattern very much like *bryanti*. It is quite impossible to state with certainty the exact position of this insect.

Rhipidia calverti sp. n.

Antennae with first eleven flagellar segments long bipectinate; pedicels of segments pale, whitish; thoracic pleurae with a dark brown stripe; tip of hinder tarsi golden-yellow; wings subhyaline with five brown marks along costal margin.

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[6] Williston, *l. c.* 287, pl. 9, fig. 57, pl. 10, fig. 57a.

[7] Osten-Sacken, *l. c.* 208; Monographs, 4. pl. 3 fig. 5.

[8] Enderlein. Zool. Jahrb. (1912) **32**: pt. 1, 80-81, fig. V 1.

[9] Johnson. Proc. Bost. Soc. Nat. Hist. **35**: no. 5, 123-124, pl. 16, fig. 20. April, 1909.

[10] Enderlein, *l. c.* 81-82, fig. Z 1.

Male: Length, 6.6 mm.; wing, 7.3 mm.; antennæ, about 3 mm.; Middle leg, tibia, 6 mm.; tarsus, 6.1 mm.; Hind leg, femur 6.8 mm.; tibia 7.5 mm.; tarsus 5.2 mm.

Head: Rostrum brown; palpi very dark brown, the last segment very slender. Antennae (see fig. h), first segment long cylindrical, second short, oval, about equal in size to the swollen base of the first flagellar segment; segments 3-13 enlarged at base into an oval knob, the inner side of this knob produced into two long pectinations; on the third segment, the pectinations a trifle over twice the length of the pedicel of the segment; pectinations increasing in length to the 8th to 10th segments where the pectinations are about three and one-half times as long as the pedicel of the segment; from the 11th on gradually shortened to the 13th; 14th segment simple, enlarged medially; there are eleven pectinated segments, more than in *maculata*, *bipectinata* or *costalis;* the pectinations are slender, tapering gradually to the tip, which is not enlarged. Segments at the base with two long hairs on the side opposite from the pectination, and the pectinate arm is densely clothed with delicate pale hairs. Pedicels to the flagellar segments rather long, subequal, conspicuously more slender than the enlarged base. Segments brown on the knot and pectinate arm, the pedicel conspicuously white. Front and vertex extremely narrow between the eyes, practically divided at the narrowest point; front, vertex and occiput dark blackish-gray.

Thorax: Cervical sclerites brownish-yellow. Pronotum brown on dorsum, more yellowish-brown on sides. Mesonotum, præscutum, brownish-yellow with a broad rich reddish-brown dorsal stripe on each side of the narrow ground middle line, these diverging towards the suture; scutum dull yellow, very pale, whitish, in the middle, most of the lobes reddish-brown, these large spots being the caudal ends of the præscutual stripes; scutellum very pale, whitish; postnotum yellowish. Pleurae light yellow, darkened on the ventral half; a broad, dark brown stripe from the pronotum across the pleurae ending above the metacoxae, where a less distinct band runs cephalad, traversing the sides of the sternum, including the outer faces of the coxae. Halteres, extreme base and most of the knob, light yellow, stem and base of knob dark brown. Legs: fore legs gone; middle leg coxae and trochanters yellowish, outer face of coxa darkened; femora dull yellow, rather darkened apically; tibiæ dull brownish yellow; tarsi brown; hind leg similar to middle, but tarsal segments 2 to 4 conspicuously light golden yellow, the 5th black. Wings hyaline, costal margin with five grayish-brown marks, the third over the origin of *Rs*, the fourth at tip of *Sc*, the last, stigmal darkish; the interspaces between these marks cream colored; veins brown, darkest in the brown marks, lightest, cream colored on subcosta in the interspaces. Cord, outer end of cell 1st M_2, and cell *R* in under the dark marks with scarcely visible darker clouds (see fig. d). Venation: *Sc* long, ending beyond the middle of *Rs*; Sc_2 at its tip; *Rs* long, basal deflection of M_{1+2}, less than one-half as long as the second section of M_{1+2} (between r-m and m); basal deflection of Cu_1 just before the fork of M.

Abdomen: Tergum brown; sternum lighter, yellowish-brown.

Holotype, male, Rio Surubres, Costa Rica. Bonnefil F'm. 800 ft. altitude, October 20, 1909. By sweeping, coll. Dr. P. P. Calvert. Type, coll. Am. Ent. Soc. Phila. Named in honor of the distinguished student of Odonata, Dr. P. P. Calvert, who collected the type in Costa Rica while securing material for the Biologia Centrali-Americana. It is a magnificent insect, nearest allied, perhaps, to *bipectinata* Will.

Rhipidia cramptoni sp. n.

Antennae with ten flagellar segments long bipectinated; antennae brownish; thoracic pleurae dark on the metapleurae and caudal portions of the mesopleurae; wings light yellow with numerous dots in almost all the cells; conspicuous costal blotches lacking.

Male: Length 5.3 mm.; wing, 7.1 mm.

Head: Rostrum light brown; palpi yellow. Antennae (see fig. i), first segment elongate-cylindrical; 2nd globular, its diameter greater than the first; 3rd segment subglobular basally with a very short pedicel, less than one-half the length of the swollen portion; 4th segment, base small, globular, produced into two pectinations on the under side, pectinations short, only a little longer than the segment itself, the dorsal pectination rather shorter, pedicel of the segment longer than the enlarged base; 5th segment, base subglobose, with the pectinations more elongate and slender, pedicel a little longer than that of the 4th segment; 6th segment, base only a little enlarged, ovate, pectinations long, at least twice as long as the entire segment, pedicel longer than that of the 5th segment; segments 7 to 11 with the bases oval, pectinations very long, pedicels long and slender; 12th segment, with the swollen base elongate-ovate, pectinations and pedicel shorter than in the 11th segment; 13th segment, base elongate, pectinations short, about as long as those of segment 4 but more slender, pedicel short; 14th segment slender, more enlarged basally. Segments 1-2 dark brown; segment 3 and bases of succeeding segments light brown; pectinations dark brown with numerous pale hairs; pedicels very pale, almost white; two long hairs on side of each basal swelling, opposite to the pectinations. Front with a conspicuous tubercle in the middle; vertex between the eyes very narrow. Front, vertex and occiput very dark brown, sparsely gray pruinose.

Thorax: cervical sclerites dark brownish-black. Pronotum very dark brown. Mesonotum, præscutum rich reddish-brown, darker brown dorsally, in front and on the caudal half; scutum, lobes dark brown with a large yellow spot in the center of each; scutellum yellowish-brown; postnotum dull yellow. Pleurae, propleurae dark brown on dorsal half, light yellow pollinose on ventral half; cephalic two-thirds of the mesopleurae light yellow; remainder of pleurae very dark brown. Halteres light yellow. Legs broken; fore coxa and trochanter light yellow; middle and hind coxae very dark brown basally; apically, and the trochanters, pale, whitish. Wing: light yellow, the cells *C* and *Sc* rather brighter; no large brown blotches along costa, as in *maculata*, *costalis* and *calverti;* a small brown spot at end of *Sc*, another on cross-vein *r;* a larger brown spot at origin of *Rs;* a large spot at tip of 2nd *A*. Faint narrow seams along the cross-veins and deflections of veins, especially on *Cu*, just above the fork of *Cu*. Numerous pale grayish-brown dots sprinkled in most of the cells (cells *Sc* and 1st M_2 excepted). (See fig. c). Venation: *Sc* rather long, ending before the middle of *Rs;* cell 1st M_2 small; basal, deflection of Cu_1 far before the fork of *M*.

Abdomen: Tergum dull yellow; segments 2 and 3 mostly dark brown; 4 to 7 dark brown apically; sternum dull yellow.

Holotype, male, North Brazil, August 17, 1911 (coll. H. E. Crampton). Type in coll. Amer. Mus. Nat. Hist. I take pleasure in naming this fine insect after Professor H. E. Crampton, who collected the type on his recent trip with Dr. Lutz in British Guiana and Northern Brazil.

RHIPIDIA UNIPECTINATA Williston.

A female from the United States National Museum, determined by Coquillet as *unipectinata*, agrees well in most respects; however, the stem and knob of the halteres is deep black, not brown; wings with distinct costal blotches, etc. The coloration of the posterior tarsi is very similar to that of *R. calverti*, which has long, bipectinated male antennae, not long unipectinate antennae as described for *unipectinata*. The specimen is labelled "Patalue, Guatemala. 700 ft. (Dr. G. Eisen.) Received Jan. 6, 1903."

√ **Rhipidia subpectinata pleuralis** subsp. n.

Resembles *subpectinata* Will., of the Lesser Antilles, but is larger, the antennae dark brownish-black excepting the light yellow 12th and 13th segments; head brownish, gray pruinose, not "ochraceous yellow." Thorax: mesonotum, præscutum as described for *subpectinata* but with a broad median grayish stripe overlying the brownish dorsum; scutum and scutellum broadly whitish medially, brownish on the sides, a dark brown stripe on either side of the pale median stripe. Pleurae not "with a narrow black stripe" but with a broad black band, clearly defined on the dorsal margin, below suffusing the ventral pleural sclerites; an indistinct narrow stripe over the base of the coxæ, almost confluent with the broad dorsal band. Halteres light yellow, knob a little darker. Legs: femora with an indistinct subapical brown band; wings as in *subpectinata*. Abdomen dark brown, tergites 8 and 9 light yellow; sternites yellowish.

Male: Length 4.8 mm.; wing, 5.7 mm. Female: length 4.9 mm.; wing, 5.8 mm.

Holotype, male, Trece Aguas, Cacao, Alta Vera Paz, Guatemala, March 28 (coll. Schwarz and Barber). Allotype, female, Bocas de Toro, Panama, 1905 (coll. McKenney). Types in coll. U. S. Nat. Mus.

It is probable that comparison with *subpectinata* will give this form specific rank. The description of *subpectinata* agrees closely with *annulicornis* End., except in the finely spotted wings of the latter. The pale antennae of these two forms is quite different from that of *pleuralis*, which agrees in this respect with *schwarzi* or *domestica*. Whether the specimen listed from Mexico (Teapa in Tabasco) by Professor Williston (Biol. Cent. Amer. Diptera 1, Suppl. 226, Dec. 1900) refers to this variety or not is uncertain.

RHIPIDIA ANNULICORNIS Enderlein.

I have four specimens that agree closely with Enderlein's description except in their smaller size. The female has never been described, and I make this the allotype.

Allotype, female, quite like the male in color; valves of the ovipositor are rather short, tergal valves very slender, arcuated; sternal valves bladelike, almost straight.

Male: Length, 4.1 mm.; wing, 5.2-5.4 mm. Female: 4.3--4.4 mm.; wing, 5.4-5.5 mm.

Allotype, female, Trinidad, June (Aug. Busck); three specimens, 2♂ 1♀ with the allotype. Allotype and 1♂ 1♀ in Coll. U. S. Nat. Mus.; 1♂ in author's collection. Some of the specimens are very pale as though newly transformed.

Rhipidia schwarzi sp. n.

Antennae subpectinate; mesothoracic præscutum with a broad pale margin; wings with numerous dots in the cells; antennae mostly black.

Male: Length about 5.5 mm.; wing, 5.4-6.3 mm. (type). femora, 4.3 mm.; tibia, 5.2 mm.

Male: Head: rostrum and palpi dark brownish-black. Antennae, first segment elongate-cylindrical; flagellar segments strongly subpectinated, less marked on the apical segments. Antennae dark brown, segments 12-13 white. Front, vertex and occiput dark brown, thickly gray-pollinose, clearer gray behind.

Thorax: Pronotum above almost white, especially the scutellum. Mesonotum, præscutum, lateral and cephalic margin broadly pale yellow, very conspicuous, narrowest just before the wing root, broadest in front; remainder of the sclerite rich chestnut-brown, darkest brown just inside the pale lateral band; scutum, lobes dull chestnut, pale, grayish, medially and on sides. Pleurae brown, dorsal edge light yellow, continued back from the præscutal margin, becoming almost white behind the wing root, a dark brown stripe extending from the cervical sclerites caudad, running above the fore coxa, beneath the root of the halteres, fusing with the dark abdominal pleural stripe; ventral portions of pleurae and the sternum pale, grayish-pollinose. Halteres light yellow, knob a little darker brown. Legs, coxae dark externally, pale on the inner face; trochanters and base of femora pale yellow; femora darker brownish apically, especially in the fore legs; tibiae and tarsi yellowish-brown. Wings hyaline or nearly so, brown spots at tip of Sc_1, on cross-vein *r*, at origin of *Rs;* cross-veins and deflections of veins seamed with pale brown; cells with large, pale brown spots scattered over their area (see fig. e). Venation: *Sc* rather long, ending about over the middle of *Rs;* basal deflection of Cu_1 far before the fork of *M*.

Abdomen: Tergum light brown, extreme lateral edge dark brownish-black; sternum lighter colored, the lateral margins broadly brown.

Holotype, male, St. Domingo (F. E. Campbell). Paratype, male, Cayamas, Cuba, February 22 (E. A. Schwarz). Types in coll. U. S. Nat. Mus. (No. 15, 138). I take pleasure in naming this fine member of the *subpectinata* group after Dr. Eugene A. Schwarz, the distinguished coleopterist, who collected the Cuban specimen.

√ **Rhipidia multiguttata,** sp. n.

Antennae subpectinate; mesothoracic præscutum not margined with pale and without conspicupous brown stripes; wings with numerous dots in the cells.

Male: Length, about 5.5 mm.; wing, 7.4-7.6mm. Fore leg, femur, 4.85 mm.; tibia, 5.4 mm. Hind leg, femur, 6.1 mm.; tibia, 6.5 mm.; tarsus, 5.8 mm. Female: Length, about 5.8 mm.; wing, 7.9 mm.

Male: Head: rostrum and palpi dark brown. Antennae, first segment elongate-cylindrical; 2nd oval, large, flagellar segments subpectinated, the distal ones less strongly. Antennae dark brown, the apical flagellar segments lighter brown, with dense whitish hairs. Front dark brown with a short blunt tubercle in the middle; vertex between the eyes rather broad (for males of this genus), light brownish-gray, pollinose; extreme hind margin of occiput brown.

Thorax: Pronotum, scutum dark brown; scutellum light yellow, raised above the level of the præscutum. Mesonotum, præscutum brown, more yellowish behind, medially light chestnut-brown, darkening to a deeper brown just before the suture; sides of the sclerite just before the suture so that the caudal half of the præscutum appears trivittate; scutum yellowish-gray, clearest medially, a brown spot in the middle of each lobe; scutellum and postnotum brownish-gray pruinose, a narrow brown median stripe on the latter. Pleurae brownish-gray with two narrow dark brown stripes traversing the pleural sclerites, the most dorsal beginning over the fore coxa, the ventral one behind the fore coxa. Halteres light yellow, knob a little browner. Legs: coxae yellowish-brown; trochanters and femora light yellow, the latter with an indistinct brown subapical ring; tibiae and tarsi dull yellow, the last tarsal segments brown. Wings hyaline or nearly so; veins yellowish; a brown spot at origin of *Rs*, at tip of *Sc*, in cell *Sc* at about two-thirds its length; brown seam to cross-vein *r*, fork of *Rs*, cross-veins and deflections of veins; a series of larger pale brown spots in cell *M* along vein *Cu;* all cells thickly sprinkled with very pale brown dots (see fig. a). Venation: *Sc* rather short, ending before the middle of *Rs;* basal deflection of Cu_1 sometimes far before fork of *M*, sometimes closer to fork as in the paratype figured.

Abdomen: Tergites dull yellow, narrowly brown on the sides and on the caudal margin, indistinctly darker medially; sternites dull yellow, brownish on lateral edges.

Female: Quite as in male, in the allotype the brown marks on the caudal part of the præscutum not evident.

Holotype, male, Totonicipan, Guatemala, 1902 (Dr. G. Eisen). Allotype, female, with the type.

Paratype, female, Guatemala, July, 1902 (Dr. G. Eisen). Types in coll. U. S. Nat. Mus. (No. 15, 137).

RHIPIDIA DOMESTICA Osten-Sacken.

Head: Rostrum and palpi brown. Antennae dark brownish-black; segments 12-13 almost white. Front, vertex and occiput light gray.

Thorax: Pronotum light brown with a dark brown median stripe. Mesonotum, præscutum golden-sericeous on sides and behind; a broad, clear median stripe with darker lines as follows: a conspicuous dark brown line on either side of the very narrow ground line, occupying the caudal two-fifths of the sclerite; two small dark brown spots in front of the anterior ends of these marks and two still smaller dots on the humeri; a narrow median brown line on the front of the sclerite, broadest in front; a broad lateral stripe shorter than the caudal median stripe, running to the suture and overspreading the lobes of the scutum, making the sclerite bivittate; scutellum similar in color to the scutum; postnotum grayish. Pleurae light yellowish-brown with two narrow brown stripes. Halteres light yellow, knob not distinctly darker. Legs: coxae traversed by the ventral pleural band; trochanters light yellow; femora yellow darkened toward the tip; tibiae and tarsi yellowish-brown. Wings almost hyaline; dark brown clouds at base of cell *Sc*, at three-fifths of the length of *Sc*, at origin of *Rs;* a pale, circular hyaline-centered cloud at the stigma; in center of cell 2nd R_1, along cord, in centers of radial cells, at tips of the veins, etc. Venation see fig. g.

Abdomen: Tergum brown, apices of the sclerites broadly darker brown; genitalia yellow; sternum yellowish-brown.

Male: Length, 5.3 mm.; wing, 5.4 mm. Female: 4.5-5.8 mm.; 6.1-7 mm.

The specimens that I have before me are as follows: (1) Baracoa, Cuba, September, 1901 (Aug. Busck), ♂, wing figured. (2) Balaclava, Jamaica (T. D. A. Cockerell), ♀. (3) Vera Cruz, Mexico, December 14, 1907 (Frederick Knab), ♀. (4) Cordoba, Mexico, December 25, 1907 (Frederick Knab), ♀. (5) Trinidad, June (Aug. Busck), ♂. (6) With the last, ♀.

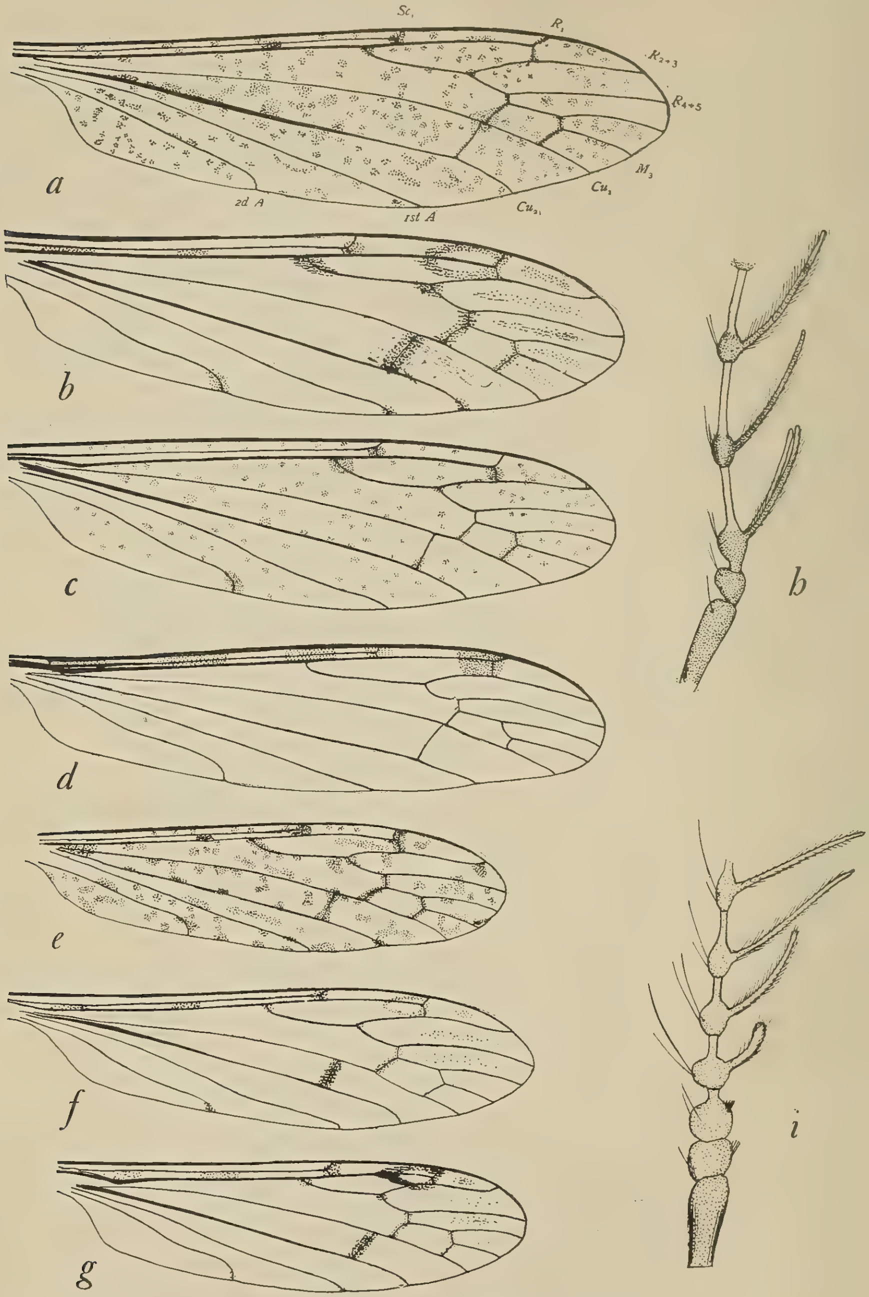
All of the specimens are in coll. U. S. Nat. Mus., except No. 4, which I have retained for my cabinet.

Rhipidia domestica angustifrons subsp. n.

Like *domestica* Osten-Sacken, but coloration different. Eyes large, in dried specimens light gray, not black, possibly not normal; vertex between the eyes long and narrow; vertex with a large brown spot in the center. Thorax with the median stripes confluent forming a rectangular mark on the caudal portion of the sclerite; lateral præscutal stripes very broad, triangular, the usual dots in front of the median blotch are, as a rule, produced into long, narrow streaks, with a third one between them in the middle, making the cephalic half of the præscutum appear trivittate; lobes of the scutum mostly brown; scutellum very pale. Pleural stripes broader but ill-delimited. Wing, fig. f.

Male: Length, about 5 mm.; wing, 6 mm. Female: Length about 6.8 mm.; wing, 6.8 mm.

Holotype, male, Guayaquil, Ecuador (Francisco Campos).


Sc,
R,
R2+3
R4+5
M3
Cu1
Cu2
1st A
2d A
a
b
c
d
e
f
g
b
i

ALEXANDER—TROPICAL AMERICAN RHIPIDIAE.

Allotype, female, with the type. Paratypes, male and female, with the type. Types in coll. U. S. Nat. Mus. (No. 15136); one male paratype in author's collection.

Rhipidia domestica amazonensis subsp. n.

Like *domestica* Osten-Sacken but much larger and darker in color, the thorax much browner, the lateral præscutal stripes curve distad at their ends, suffusing the *lateral* edge of the scutum with dark brown; postnotum not conspicuously gray-pollinose; fore femora very dark brown; wings distinctly tinged with brown, markings darker, better defined. Wing, fig. b.

Male: Length, about 5.7-5.8 mm.; wing, 5.7-6.5 mm. Female: Length, about 6.1-7.1 mm.; wing, 6-7.8 mm.

Holotype, male, Igarape-Assú, Para, Brazil, February 3, 1912 (H. S. Parish). Allotype, female, with the type, February 1, 1912. Paratypes, 9 ♂, 1 ♀, with the type, January 23rd to February 4, 1912. Types in coll. Cornell University; paratypes in coll. U. S. Nat. Mus. and in author's collection.

Explanation of Plate I.

(N. B. The wings are all drawn to scale by means of the Cornell projection lantern and show the relative size of the species.)

a—Wing of *Rhipidia multiguttata*, sp. n. ♂.
b— " " *domestica amazonensis*, subsp. n. ♀
c— " " *cramptoni*, sp. n. ♂.
d— " " *calverti*, sp. n. ♂.
e— " " *schwarzi*, sp. n. ♂.
f— " " *domestica angustifrons*, subsp. n. ♂.
g— " " *domestica domestica* O. S.
h—Antenna of " *calverti*, sp. n. ♂.
i— " " " *cramptoni*, sp. n. ♂.

Editorial.

From a slumber lasting twenty-eight years, the Bulletin of the Brooklyn Entomological Society awakens, not like Rip Van Winkle, to find itself aged and enfeebled, but replete with vigor and strength. We are confident that in joining once more the ranks of American entomological periodicals the Bulletin will be accorded the right hand of fellowship and welcomed as an additional medium of publication for the benefit of a rapidly developing science.

Not often is it vouchsafed to one of the founders of a magazine to speak again through its pages after the lapse of so long an interval; and the reminiscences of the honored as well as honorary president of the Brooklyn Entomological Society, printed elsewhere in this issue, are therefore of peculiar interest. For the benefit of those who are not familiar with the history of the Society's publications, we may add by way of supplement to Mr. Graef's article that the Bulletin was first issued in 1878 and discontinued publication in 1884 at the close of the seventh volume. It was succeeded by *Entomologica Americana*, which represented a consolidation between the Bulletin and *Papilio*.

The Bulletin will make a special feature of short notes, new or noteworthy records and general observations. The longer and more technical articles will ordinarily be printed in serial form, but it has been necessary to depart somewhat from this policy in the initial issue, which, therefore contains more than the normal number of pages. The important contribution by Mr. Alexander, however, being accompanied by a single plate, could not very well be divided. In the next issue of the Bulletin we shall include a number of short notes and also some interesting Long Island records.

The pagination of the magazine will be increased as our subscription list warrants. This issue is being distributed extensively among entomologists, and we advise those who wish to secure complete sets to subscribe at once, as the edition is limited. We may add that the publication committee has determined to make no exchanges, for the reason that they would be of little use to the Society under present conditions. Therefore, a subscription will be necessary to secure copies of the Bulletin after the present issue.

Proceedings of The Brooklyn Entomological Society.

The regular monthly meeting of the Brooklyn Entomological Society was held on October 10, 1912, at 55 Stuyvesant Ave., with nineteen members and three visitors present. F. Conrad Pasch, 1224 75th St., Brooklyn, and H. H. Brehme, 73 13th Ave., Newark, were elected to membership.

Dr. D. S. Martin, of the Charleston, S. C., museum exhibited his collection of insects embalmed in copal. The copal is a fossilized gum, the exudation of a deciduous tree, *Tricholobium mozambicense*, which still survives, although the copal of commerce dates from the Quaternary or post-Tertiary age. The New Zealand product has not been found to contain insects. That from Brazil has shown only termites. The Zanzibar product is mined several miles inland in sand which was formerly of the seashore, and this locality yielded all the specimens in the collection exhibited. All orders were represented, the two commonest species being a scolytid beetle and a small bee. A hundred bees were imbedded in a piece of copal less than two inches long. The specimens of beetles were especially fine, their hard bodies having prevented distortion. Through the polished gum all the anatomical structures could be made out in numerous instances distinctly enough for description as species. Notable were a Trichodes, two elaters and a scarabæid. There was one fine reduviid, and a large number of jassids and other small Hemiptera. Small Diptera and Hymenoptera were numerous. Two Lepidoptera only were in the collection; one moth had a wing spread of nearly 1½ inches.

A number of insects in amber were also shown, amber being a similar gum, but coming from a coniferous tree of the early Tertiary or Oligocene period.

A member of the Society described the process of embalming now going on in pine gum. Pine trunks are gashed with an axe during the winter. In early spring the sap exudes freely and slowly hardens. Insects get their feet caught in the sticky gum and soon perish and are buried by the later exudations.

Exhibition of specimens from the summer's collections completed the session. A notable fly shown by Mr. Marshall was *Volucella obesa*, a Southern species caught at Sheepshead Bay. Mr. Schaeffer exhibited a box of beetles, adding to the list of Long Island records. *Lebia pleuritica*, generally very rare, was taken copiously by beating oak at Central Park. *Metachroma pallidum*, *laterale* and *lævicolle* were taken together in numbers, varying from pale straw color to almost black and tending to show that the three are only two good species. *Bythinus bithinoides* is a Long Island record. Yaphank yielded *Brachyacantha albifrons*, the western form of *ursina*. *Ditoma pinicola* was beaten freely from oak. *Pityobius anguinus*, a Northern elater, *Strategus antæus*, *Lachnosterna knochii* and *Trichius texanus*, Southern forms, were recorded from Long Island. *Zabrotes subnitens* and *Anthonomus scutellaris* were beaten from *Prunus maritima*. *Cryptorhynchus fuscatus* was also recorded. *Elytroleptus floridanus* can no longer be considered remarkably rare on the island.

The prize capture by Mr. Pasch was the noctuid *Thysania zenobia* at sugar in South Brooklyn. There were two other records this summer of this hitherto unseen stranger from the far south.

Mr. Schott's prize was a cerambycid, *Ceratographis biguttatus* from Oakdale, not previously recorded from the East.

R. P. Dow,
Recording and Corresponding Secretary.

EXCHANGES

Following the custom of other entomological publications, the *BULLETIN* will be glad to give space to exchange notices sent in by its subscribers. For all matter in excess of three lines a charge will be made of ten cents per line. To ensure publication in the next issue, such notices should be sent in not later than the first day of the month in which the *BULLETIN* is published.

WANTED—Living cocoons of *polyphemus* from any locality for experimental purposes. American and exotic Saturniadae in exchange.—Public Museum, Staten Island Association of Arts and Sciences, New Brighton, N. Y.

THE BROOKLYN ENTOMOLOGICAL SOCIETY

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GEORGE FRANCK,
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Vol. VIII DECEMBER, 1912 No. 2

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OF THE

BROOKLYN ENTOMOLOGICAL SOCIETY

NEW SERIES

BROOKLYN ENTOMOLOGICAL SOCIETY
1872

National Museum

PUBLICATION COMMITTEE
CHARLES LOUIS POLLARD
CHARLES SCHAEFFER ROBERT P. DOW

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BULLETIN
OF THE
BROOKLYN ENTOMOLOGICAL SOCIETY

Vol. VIII DECEMBER, 1912 No. 2

Some Ancient Beliefs Concerning Insects.

By Harry B. Weiss, New Brunswick, N. J.

Few things are more interesting than the beliefs of the ancients concerning insects, and in this day of research and experimentation one is inclined to wonder how it was possible for such theories ever to be held.

As to the eggs of the house mosquito, *Culex pipiens*, the female after having laid the proper number on the surface of the water surrounded them with a kind of "unctuous" matter which kept them from sinking immediately, and then fastened them with a thread to the bottom of the pool. This prevented them from floating at the mercy of every breeze,—from a suitable place to one less suitable. As they came to maturity they sank deeper and deeper and upon reaching the bottom, hatched into larvæ. This description is credited to Langallo, who mentioned it in a letter to Redi, printed at Florence in 1679. Of course the impossibility of a mosquito spinning a thread and plunging under water with it, was evidently not thought of.

Honey-dew was described by Dr. Good as "a peculiar haze or mist loaded with a poisonous miasm that stimulates the leaves to a morbid secretion of saccharine and viscid juice," and another writer accounted for it by electric changes in the air. It is evident from this that our ancient friends were not careful observers in some cases.

Coming to galls, the physiology of which is not understood even at the present day, Reaumur gives the following remarkable explanation: "After the female has pierced the part of the plant which she selects, she ejects into the cavity a drop of her corroding liquor and immediately lays an egg or more there; the circulation of the sap being thus interrupted and thrown by the poison into a state of fermentation, that burns the contiguous parts and changes the natural color. The sap turned from its proper channels, extravasates and flows round the eggs while its surface is dried by the external air and hardens into a vaulted form."

It is known at present that the fluid ejected during oviposition is a lubricant and that the puncture made by the ovipositer has nothing to do with the formation of the gall and it is supposed that a larval fluid stimilates the growth of certain plant cells. Taking everything into consideration, this explanation is not much better than the previous one.

As to transformations of insects, Swammerdam was of the opinion that the changes from egg to larva and pupa to adult were effected by the "evaporation of the superabundant fluids." According to him the egg was nothing more than the insect itself "which required the evaporation of the surrounding moisture and casting of the old skin to bring it to its perfect form."

Coming back to galls again, the parasitism of these resulting in different species emerging from one gall gave rise to the fanciful theory that they were generated by the "vegetative and sensitive soul in the plant." This same theory also accounted or was supposed to account for the presence of larvae in nuts and fruits of different kinds.

Two other prominent naturalists in their day, Ray and Godart found the same difficulty in explaining the issuance of parasites from lepidopterous larvae and pupae. They supposed that if through some defect Nature could not bring the caterpillar to maturity, in order that her aim would not be entirely defeated, she formed it into insects of a smaller size.

Plant lice and ants, always being found together, it was concluded that the ants "shed upon the leaves of plants a sort of plastic humour from which the lice were generated." More than this, the atmosphere was loaded with countless numbers of insect eggs, "so small as to elude the senses." These eggs after meeting a proper bed, hatched in a few hours and caused what was known as a blight.

Bonnett and Reaumur confused pollen and wax and thought that the wax was collected by the bees from all sorts of trees and plants and afterward kneaded by the feet of other bees into plates. Even honey was believed by some to be "an emanation of the air, a dew that descended upon flowers," as if it had a special commission to fall only upon them.

The suctorial mouth of the flea was described by Mouffet as "the point of his nib is something hard that he may make it enter the better and it must necessarily be hollow that he may suck out the blood and carry it in." Furthermore, Mouffet says, "the lesser, leaner and younger fleas are, the sharper they bite, the fat ones being more inclined to tickle and play."

And as for mosquitoes, "the gnats in America do so splash and cut that they will pierce through very thick clothing, so that it is excellent sport to behold how ridiculously the barbarous people, when they are bitten, will frisk and skip and slap with their hands, their thighs, buttocks, shoulders, arms and sides even as a carter doth a horse."

This sounds very much as if Mouffet had at one time been in New Jersey. Conditions are now; however, considerably better.

An Early Record of Swarms of Lachnosterna (Coleop.) in Kansas.

By F. M. WEBSTER, Washington, D. C.

It is not often that we get glimpses of the out-of-door actions of insects in a country not yet defaced by the advance of civilization. The knowledge that we do get is generally confined to more or less careful and complete collections made by naturalists passing through the country, stopping only to camp for a night, or, perhaps during a stormy day. Besides, it seems as though even these occasional glimpses given by travelers are doomed to become covered up in a mass of other information, and so lost sight of as to be overlooked by entomologists. A good illustration of this is to be found in Francis Parkman's "The California and Oregon Trail."

Sometime about the middle or perhaps the latter part of May, 1846, when passing from Fort Leavenworth over the St. Joseph trail, east of the Big Blue River, probably in a section of country now included in northern Nemaha, or, possibly Marshall County, Kansas, swarms of Lachnosterna were encountered. It was during a pleasant evening on the prairies and the air was observed to be full of the beetles, or "dor-bugs," as Parkman terms them. Besides, they were flying about just above the tops of the grass blades making a droning sound as if twenty bee-hives had been overturned at once, while the ground was thickly perforated with holes from which the beetles were supposed to have emerged. A little later in the evening they invaded the tents of the travelers, humming over their heads like bullets, getting down their necks and marching over their faces during the night, while in the morning several dozen were found clinging to the inner folds of their blankets. The cook, who had evidently left melted grease in his frying pan over night, found the bottom covered with beetles firmly embedded in the hardened grease. Multitudes of the beetles were also found lying parched and shriveled among the ashes of the campfire of the previous evening.

On the Endurance of Swarms of Cimex lectularius L [Hemip].

By C. E. Olsen, Maspeth, N. Y.

In preparing some specimens of this bug for microscopic examination I was astonished at the degree of endurance they displayed. On July 4th I brought home about twenty individuals in small vials; they soon began to breed and many eggs and young were obtained in the first two weeks. They were then laid aside and not again examined until September 2nd. At this time I still found life in some of the adults, and many of the young were very active. They were again put aside until October 12th, when all the full grown ones were found to have died as well as some of the young in the first instar and all of those in the second instar, but there were still some very active young in the first instar. I exposed these to cyanide for four or five minutes and removed them in the supposition that all were dead, but I was much mistaken, for they became very lively in a short time. I then immersed them in denatured alcohol, and here again was greatly surprised at the resistence shown. As a rule it required at least fifteen minutes to kill them by this method, and one particular specimen resisted death for nineteen minutes, having been immersed at 12:29 P. M., and not ceasing all activity until 12:48.

Mr. H. G. Barber recently mentioned having discovered this species plentiful in a chicken coop. Commenting upon this fact to Mr. O. Aakerson of Winfield, L. I., I learned that the bug had troubled him in the same way for the last five years. When I investigated the abandoned coop I found thousands of individuals in all the cracks and crevices and under the peeling layers of whitewash, and by passing the mouth of an open vial along the under side of one of the roof beams about fifty were gathered in.

On Metachroma laterale, pallidum and laevicolle (Coleop.).

By Charles Schaeffer, Brooklyn, N. Y.

While collecting at Central Park, Long Island, this year in company with my friend William T. Davis, a considerable number of what I then thought to be one variable species of Metachroma could have been obtained by beating branches of *Quercus marylandica*. However, only some twenty or thirty specimens were bottled, mostly selected as representing all possible color variations.

Examining the series at home, after they were mounted, I was surprised to find that, according to the descriptions, they were referable to the three species mentioned above. The two species, *laterale* and *pallidum*, however, do not differ from each other except that the former has a large, black spot laterally at the middle of each elytron while *pallidum* is entirely pale. Suspecting that *laevicolle* was only an extreme smooth form of these, I looked for intermediates but even with additional material obtained on a second trip, I did not succeed in finding any.

Crotch and Horn describe *laevicolle* as uniformly pale, and I have not observed it mentioned elsewhere that this species is variable in coloration, ranging from thorax and elytra uniformly pale to almost entirely black as shown by my long series.

Besides the difference in sculpture of the thorax and head the origin or the starting point of the black color is also different in *laevicolle* and *laterale*. The black color in *laevicolle* starts always at the suture and spreads gradually towards the lateral margins and nearly to apex, while in *laterale* the black color begins to show first at the middle of lateral margins of elytra. The spot in this form may be small or large but never seems to become large enough to cover almost the entire elytra as in some specimens of *laevicolle*.

Three New Species of Hister [Coleop.]

By CHARLES SCHAEFFER, Brooklyn, N. Y.

GROUP DEPURATOR.

Hister puncticollis sp. n.

Broadly oval, black. Head scarcely punctuate; frontal stria entire. Prothorax feebly arcuate at sides; outer lateral stria absent, inner stria deeply impressed; surface smooth, almost impunctate, except a number of coarse punctures at sides near the inner stria. Elytra with four entire striae; fifth short apical; sutural attaining the middle but more or less abbreviated at apex. Subhumeral stria interrupted, apical portion distinct and deeply impressed, basal portion small and variable in distinctness. Oblique humeral stria distinct and finely impressed. Propygidium moderately coarsely and not densely punctate at sides, punctures finer at middle and apex; pygidium similarly punctate and both with scarcely any finer punctures intermixed. Prosternal lobe broadly rounded and strongly margined at apex; lateral striae absent. Mesosternum emarginate; marginal striae entire. Epipleurae bistriate. Anterior tibiae tridentate; apical tooth no bifid. Length 6 mm. White Sulphur, West Virginia, collected by Lieut.-Colonel Wirt Robinson.

The interrupted subhumeral stria and tridentate anterior tibia places this species in Horn's group *depurator*. By its unistriate prothorax it has to be associated with *semisculptus* and *dispar*, from the former it differs in having a bistriate epipleura, three-dentate anterior tibiae and elytra with four entire striae; from the latter the distinct apical portion of the subhumeral, the four entire elytral striae and the thorax near the inner stria coarsely punctate will separate this species.

Hister carinifrons sp. n.

Moderately broadly oval, black, shining. Head moderately densely punctate, punctures not coarse; frontal stria obliterated at apex but replaced by a more or less distinct carina. Prothorax bistriate, outer stria entire; surface almost impunctate. Elytra four-striate; fourth stria slightly abbreviated at apex; sutural stria not quite extending to apex, feebly curved inside at base; subhumeral stria represented by only the basal portion which is rather deeply impressed. Oblique humeral faintly impressed; surface extremely finely and sparsely punctate, punctures more visible at sides. Propygidium moderately coarsely punctate at base, punctures sparsely placed, at apex almost smooth; pygidium with a few fine punctures intermixed with some larger ones at base. Prosternal lobe rounded at apex with an entire marginal line. Mesosternum emarginate; marginal line entire. Anterior tibiae tridentate, apical tooth large and bifid. Length 7.25 mm.

Dayton (type) and St. Augustine, Fla., collected in November by G. P. Engelhardt.

In Dr. Horn's table of the group *depurator*, this species would have to be placed near *indistinctus* and *servus*. From both it differs in much larger size, the short basal subhumeral and long sutural striae of elytra and the absence of lateral striae of prosternum.

GROUP SERVUS.

This group was erected by Dr. Horn for those species which have the prosternum laterally striate, the anterior tibiae tridentate and the mesosternum feebly emarginate, including in this group three species to which a fourth is added below.

Hister fungicola sp. n.

Oval, black, shining. Head with a few fine punctures, frontal stria entire. Prothorax bistriate; outer stria short apical, inner slightly sinuate; surface smooth, impunctate. Elytra with three entire striae, fourth very short basal, sutural abbreviated at base and apex; subhumeral absent. Propygidium coarsely and sparsely punctate; punctures finer at middle near apex. Pygidium very finely and sparsely punctate. Prosternum laterally striate; striae convergent at apex. Mesosternum subtruncate; marginal stria entire. Anterior tibiae tridentate. Length 4 mm. Jamesburg, N. J.

A small number of specimens collected by Mr. Wm. T. Davis, on mushrooms, differ from the description of *defectus* in having only three entire striae, the fourth very short basal, and represent possibly only a variety of *defectus*.

Editorial.

The collectors of insects in the United States during the past twenty years number high into the tens of thousands. Ninety-five per cent. of them date the beginning of their interest from the admiration of a butterfly, and from this have progressed to the observation of color differences of many butterflies and moths. The primary motive is getting together pretty things. Two-thirds, however, of beginners never progress beyond this stage. Of the few who keep on passing to other insects ninety-five per cent. become interested in the limitless range of color, size and form of the race of beetles. Beyond this not one in a hundred proceeds.

In almost every sizeable town in the land there is at least one person who has pinned and kept some sort of insect collection until neglect or dermestids dispose of it. In the aggregate such collections have been of vast value, for the comprehensive student can get from each of them a general grasp on the fauna of that particular region, which would otherwise take a season of careful search, and has gotten, also, thousands of additions to the taxonomic catalogue. Heaven bless the patient country collector, even though he (or she) knows little about the subject, especially if he dates and otherwise defines what he has.

On the other hand, a collector of specimens is not necessarily an observor of nature. It is the rule, not the exception, that the collector of a box of beetles divides them by name, or, more simply, if he cannot get names, by color, and can tell almost nothing about the life cycle, habits or food of a single one. He is no more a scientist than the collector of cancelled revenue stamps, post marks or cigarette pictures. His results are of the minimum value to the world.

"Any addition to the sum total of human knowledge, however slight, is the greatest achievement open to a scholar," said Professor E. P. Morris, of Yale University. Who is to be the judge of its importance? No one has such right. An addition to human knowledge! It is the prize, the aim, the result to be proud of. No one has the right to belittle it because of its failure to be of any economic value whatever. Twenty thousand insects are enumerated in the catalogues and dismissed summarily as "of no economic importance." Nevertheless the man who should discover a spur on the hind leg of a minute "bug," the most insignificant creature on the faunal list, and who should find out what its function is in the creature's existence, why evolved, has accomplished more to be proud of than his fellow who has correctly named and aesthetically spread 5,000 specimens.

The most insignificant insect is born, grows, works, eats, fears, mates, plays and dies. The human being does no more. His senses are often less keen than the insects. His intellect is merely greater. Providence does not protect one more than the other. The discovery and description of any instinct, habit, peculiarity of structure, phase of life or death, in the least of living creatures, stands high in the category of desiderata for addition to the sum total of human knowledge.

Notes and Records.

Northern records for Pholus vitis L.—A perfect male of this handsome southern hawkmoth was taken at an electric light on Staten Island, September 16, 1912, by Mr. O. Fulda. It was not long ago recorded from East New York.—CHARLES L. POLLARD.

Calpodes ethlius on Long Island.—In the summer of 1911 several specimens of this skipper were captured at Yaphank by members of the Brooklyn Entomological Society; and in the fall the larvae were found until late in the season feeding on the cannas cultivated in Floral Park. Many of the latter were successfully bred by Mr. Doll. There have been no local records of the butterfly during the past summer, however, so it is evident that the pupae were unable to survive the winter.—R. P. DOW.

A rare Hepialid.—Specimens of *Sthenopis argenteomaculatus* from the Ramapo Mountains, N. Y., were recently shown at the Society. Mr. Doll took over one hundred specimens of this insect about thirty years ago in a swamp at Middle Village, L. I., but there has been no record of a local capture for many years. A search may be profitably made. It has a characteristic slow and undulating flight, strongly resembling that of some neuropterous insects.—R. P. DOW.

The true queen of Termes flavipes Kol.—In Proc. Ent. Soc., Washington, **14**:107 (1912), T. E. Snyder reports the finding of a true fertilized queen of *Termes flavipes* Kol., and states in a foot note that it is believed to be the first record of finding the true queen of this species. Ten years ago in Journ. N. Y. Ent. Soc., **10**:251 (1902), I recorded the finding of the true queen of *Termes flavipes* Kol., at Mosholu, N. Y., and Mr. L. H. Joutel has also found the true queen, but his record has never been published. The queen was found on July 16, 1902, while looking for termitophilous Coleoptera, inside a small, dry branch in company with a great number of workers and soldiers.—Charles Schaeffer.

A Visit with a Cicindela.—One September afternoon I anchored my boat about 100 feet off the north shore of Rockaway Beach, near a point where *Cicindela marginata* is not uncommon. A light breeze came from the south bringing at first as insect visitors diptera and hymenoptera, settling down on the white paint. Soon came lady birds and a few other beetles. Finally a *marginata* dropped to a cockpit bench, quite tuckered by its flight from shore. I offered hospitality in the shape of flies freshly killed, but my guest took no notice of them although poked within three inches of its eyes. It showed almost no alarm except when my face came near.

On the under side of the awning were many large green tabanids. Through one of these I thrust a pin and offered the impaled fly buzzing loudly. Master Cicindela eyed it for a few seconds, and walked around it, apparently mustering his courage. Finally he leaped, clasped the fly's body with all six legs and buried mandibles into the front somites of the abdomen. A large piece was thus torn out. The beetle fell back to the bench and leisurely consumed it. I could plainly watch the action of the maxillary palpi pressing the food to the mouth, curling around it. The actual mastication by the lacinia was also plainly visible, the two blades sawing back and forth alternately.

A few moments later it again approached the still buzzing fly, but an unfortunate movement frightened it and it flew, turning south against the wind. Apparently the sense of sight or orictation operated to guide it in the direction of shore.—R. P. Dow.

Correspondence.

PUBLICATION COMMITTEE:

The "sample" of the Brooklyn BULLETIN is all to the good. Congratulations. Please put me down for a subscription. "May she live long and prosper."

H. G. BARBER,
Roselle Park, N. J.

PUBLICATION COMMITTEE:

It was indeed a pleasant surprise to me, when I opened my mail and saw again the old familiar cover of the "BULLETIN of the Brooklyn Entomological Society." I saw it first before in May, thirty-four years ago. Of the two, the old and the new, the last perhaps appeals to me strongest, possibly because, I, too, am a veteran of those early days. The cover is certainly a pleasant reminder of my own entomological beginning of long ago, but of those whose names are mentioned in the text on page 1, all, save Prof. G. H. French, have crossed the Dark River.

May the New Series in the hands of the younger men be as useful as was the old "in its day and generation" is the sincere wish of

F. M. WEBSTER,
Bureau of Entomology,
U. S. Department of Agriculture.

PUBLICATION COMMITTEE:

I am delighted to see the old BULLETIN revived, and wish it success.

Of course I want it, so please enter my name as a subscriber * * *.

ANNIE TRUMBULL SLOSSON,
New York City.

IDENTIFICATIONS—The Secretary sets apart the hour from 12 to 1, Mondays, Tuesdays, Thursdays and Fridays, at his office, 15 Broad St., Manhattan, room 9, Ninth floor, to receive visitors interested in Entomology, and aid them, if possible, to identify, especially Coleoptera and Lepidoptera. Beginners will be made especially welcome.

Proceedings of The Brooklyn Entomological Society.

The regular monthly meeting of the Brooklyn Entomological Society was held on November 14, 1912, at 55 Stuyvesant Ave., with seventeen members and two visitors present.

Mr. Olsen showed a branch of white birch, heavily encrusted with the oyster bark scale, *Leptosaphus ulmi*. The record for this plant is notable. It is common on maple, lilac, etc. Mr. Shoemaker reported big swarms of the Geometrid, *Erannis tiliaria*, Harris, in Brooklyn, Oct. 26 to Nov. 6. Mr. Wasmuth took *Terias lisa*, var. *alba*, Aug. 15, a Long Island record. It is not uncommon in Texas, and occurs through the Atlantic States. He commented on the local scarcity this year of Apantesis and Papilio, and remarked that *Catoeuala* larvae, unusually numerous, were parasitized to an unusual extent.

Mr. Doll exhibited a box of bred specimens with some good records for Long Island. Among them were: *Apatela albarufa*, Central Park, *Hadena inordinata*, Woodhaven, *Atethmia rectifascia*, *Papaipema limpida*, Jamaica, on *Baptisia tinctoria*. Extremes of variation were shown in a long series of *Utetheisa bella* and a series of *Junonia coenia* showed a constant tendency toward darkness and coalescence of the eye spots of the secondaries, either late in the season or under artificially cold conditions. An aberrant *Catocala cara* had the black bands of the secondaries lost posteriorly. *Apatela funeralis* was taken at Newtown. Mr. Dow reported a small flight of *Aletia argillacea* in Brooklyn, Oct. 11, but nothing like the enormous swarm of 1911.

R. P. Dow,
Recording and Corresponding Secretary.

The Publication Committee will be glad to receive names and addresses of those to whom sample copies of the BULLETIN should be sent.

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GEORGE FRANCK,
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Vol. VIII FEBRUARY, 1913 No. 3

BULLETIN

OF THE

BROOKLYN ENTOMOLOGICAL SOCIETY

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PUBLICATION COMMITTEE
CHARLES SCHAEFFER
J. R. De La TORRE-BUENO ROBERT P. DOW

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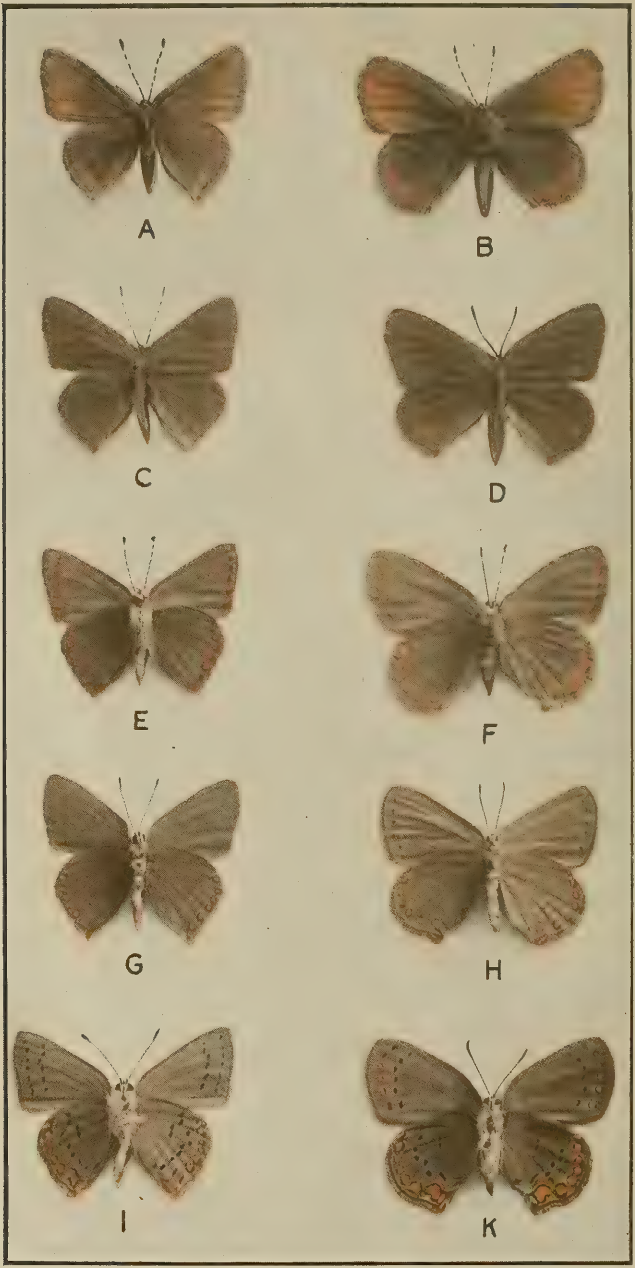

COMSTOCK—STRYMON TITUS FABR. VAR. IMMACULOSUS, NOV.

BULLETIN
OF THE
BROOKLYN ENTOMOLOGICAL SOCIETY

Vol. VIII FEBRUARY, 1913 No. 3

A New North American Butterfly in the Family Lycaenidae.

By William Phillips Comstock.

Strymon titus, Fabr.

Var. *immaculosus*, nov.

♂ and ♀. This variety is slightly smaller in size than the normal form of *S. titus* Fabr. (expanse of ♂ from 28-30 mm., ♀ from 30-34 mm. as compared with ♂ 30-35 mm., ♀ 33-38 mm. in normal specimens*).

The head, thorax, abdomen and appendages do not differ from the normal form.

The upper surface may be as in the normal form of ♂ and ♀, a satiny seal brown with slight greenish reflections (Figs. C and D), or in a series of specimens, the surface may become gradually suffused with fulvous, until an extreme form is reached in which the outer half of the disk of the primaries in both ♂ and ♀ is completely covered with fulvous scales and there appears a complete row of marginal red-orange or fulvous spots on both primaries and secondaries in ♂ and ♀, although on the primaries these spots become lost in the ground color in extreme specimens such as are shown on the plate, Figs. A and B.

On the underside the ground color varies, some specimens being like the normal form, and others of a paler shade. All black markings are obsolete to absent (Figs. E, F, G and H), showing as mere pin points even where best defined. In these specimens a trace of the white markings occurs as a few scattered scales about the black markings. The red marginal spots of the secondaries are retained for the most part in reduced size, but in those specimens where the row of red spots is repeated the full marginal length of the primaries, the secondary row is of fully normal size and appears more prominently because of the obsolescence of other markings on all four wings.

---

*Measurement made from tip of wing to center of thorax and doubled.

I did not examine the genitalia and androconia. The name given is the Latin adjective meaning unspotted or unspeckled.

Described from nine ♂ and twelve ♀ cotypes.

12 from Provo, Utah, variously dated in July, collected by Tom Spalding.
8 from Utah (general label), no date.
1 from Miniota, Manitoba, in July.

Means were selected as types, 1 ♂ and 1 ♁; the remaining specimens are considered as paratypes. The types are retained in my own collection. One pair of paratypes each are to be deposited with the National Museum in Washington, American Museum of Natural History in New York, Dr. Henry Skinner in Philadelphia, and Dr. William Barnes in Decatur, Ill.

I have checked all literature relating to *S. titus* as recorded in the bibliography below, and I can find no reference to any such variation as here described. Elrod in his "Butterflies of Montana" finds that specimens in Montana occur "with or without an outer marginal row of orange spots or a distinct orange band" on the upper side,

French in "The Butterflies of the Eastern United States" also refers to orange spots on the upper surface of the hind wings in some specimens. It is quite usual to find specimens with red-orange spots repeated upon the termen of the primaries beneath; also in females there are often one or more spots of red-orange near the anal angle of the secondaries above and sometimes a fulvous suffusion above at the anal angle of the primaries.

For the most part, eastern specimens from the southern part of Canada, New England, the Middle States and the South-western States have well defined discal bands of black spots on the under side of both wings, which are more or less edged with white. I have two male specimens from the Catskills, taken at an altitude of from 1,500 to 2,000 feet, aberrant in that the discal rows of black spots are very poorly defined and there are practically no white markings on the under side. The black spots, however, cover about the normal area and are indistinct because of suffusion and appear to be blurred. They are not like the spots in variety *immaculosus* which are, where present, reduced to fine points.

By far the most complete description of *S. titus* is to be found in "The Butterflies of the Eastern United States" by S. H. Scudder. However, he makes no reference to such a variation as I have described, but calls attention to the fact that "male specimens from Idaho and Minnesota differ from all others that I have seen in having the spots of the inner row of both wings much larger, being nearly half as large as the marginal spots of the hind wings."

Mr. Scudder also gives us information concerning the distribution, and his faunal map shows the species extending from northern New England to central Georgia on the Atlantic coast, and then in a broad belt westward along the line of the Lakes on the north and through central Texas to Arizona on the south. It also extends westward to the coast through the states of Montana and Washington. Mr. Scudder's map excludes southern Texas and the larger part of Utah from which I have specimens, and shows but one Canadian locality, in the Province of Ontario, though specimens are now recorded from Manitoba.

So far as I know *S. titus* is not recorded from California, but the type locality of the synomym *mopsus* is given as Georgia and Florida, although I know of no actual Florida records.

I record one other specimen, a male from Texas, which is interesting because the marginal row of spots on the secondaries beneath are pale buff and the specimen is of large size, being about 37 mm. in expanse. Otherwise it is typical. More material might prove this to be a member of a local race, presumably a desert form.

Bibliography of *S. titus*.

Fabr., Ent. Syst. III, 297, 1793.
Godt., Enc. Meth. IX, 688, 1823.
Dbl.-Hew., Gen. Diur. Lep., 494, 1852.
Kirby, Cat. Diur. Lep., 399, 1871.
Scudder, 4th An'l Rep. Trustees Peabody Aca. Sci., 53, 1871.
Scudder, Buff. Bull. III, 105, 1876.
Strecker, Cat. N. A. Macrol., 90, No. 109, 1878.
Edwards, Cat. N. A. Butt. 57, No. 376, 1884.
Fernald, Butt. Me., 84, 1884.
French, Butt. E. U. S., 278, 1885.
Maynard, Butt. 38, pl. 4, figs. 48, 48a, 1886.
Scudder, Butt. E. U. S. II, 809, pl. 6, figs. 24, 26, 1889.
Maynard, Manual of N. A. Butt., 146, 1891.

Blatchley, 17th Rep. State Geologist Indiana, 394, .No. 64, 1892.
Beutenmüller, Des. Cat. Butt., 281, pl. 5, fig. 8, 1893.
Skinner, N. A. Rhop., 50, No. 307, 1898.
Holland, Butt. Book, 250, pl. V, fig. 37, pl. XXX, figs. 10, 14, 1898.
Scudder, Guide to Butterflies 113, pl. XI, fig. 1, 1899.
Hamham, Can. Ent. XXXII, 365, 1900.
Smith, Insects of N. J., 375, 1899; 415, 1909.
Beutenmüller, Butt. Vic. N. Y. C., 34, 1902.
Watson, Jour. N. Y. Ent. Soc., X, 254, 1902.
Dyar, Bull. No. 52, 40, No. 384, 1902
Elrod, Butt. Mont., 131, 1906.

S. titus, syn. mopsus.

Hübner, Zutr. Ex. Schmett, 1, 24, figs. 135, 136, 1818.
Bdl.–LeC. Lep. Am. Sept., 109, pl. 34, 1833.
Morris, Syn. Lep. N. A., 102, 1862.
Harris, Ins. Inj. Veg. Flint's Ed., 278, 1862.
Packard, Guide, 266, 1874.
Mead, Wheelers Rep. V, 779, 1875.

Explanation of Plate II.

A, *S. titus* Fabr. var. *immaculosus* nov. ♂ Utah.
B, " " " " " " ♀ "
C, " " " " " " ♂ Provo, Utah, VII, 19, '08.
D, " " " " " " ♀ " " VII, 9, '09.
E, " " " " " " ♂ Miniota, Man. VII, 7, '01.
F, " " " " " " ♀ Utah.
G, " " " " " " ♂ Provo, Utah, VII, 9, '09.
H, " " " " " " ♀ Provo, Utah, VII, 23, '08.
I " " " ♂ Van Cortland Park, New York, VII, 10, '01.
K, " " " ♀ Jamesburg, N. J., VI, 25, '09.

Long Island Lepidoptera Records.—Among the rarer species recently exhibited before the Society by Mr. Engelhardt from Central and Eastern Long Island, were *Eubaphe læta*, *Scopelosoma moffettiana*, *Schinia trifascia* (on boneset), *Aglaia viatica*, *Catocala residua* (Brooklyn), *Catocala lacrymosa*, *Rhynchagrotis anchoceloides* var. *brunneipennis*, *Semiophora eliminata*, *Agrotis violaris*, *Anytus capax*, *Morrisonia vomeriana*, *Cucullia speyeria*, *Derrima stellata*, and *Lapara bombycoides*. The last named came from Promised Land, and tended toward being intermediate with typical specimens of *coniferarum*.

Lepidoptera.—*Sesia sigmoidea* is recorded from Long Island, bred from dwarf willow. *Sesia rhododendri* Beutenmüller, was bred from the rhododendrons of Prospect Park, a new record for New York State.

The Makers of Coleopterous Species.

By R. P. Dow, Brooklyn, N. Y.

A catalogue of the described species of beetles of America, north of Mexico, was published in 1852. Prior to that date there was no general list. In 1873 another, made up to date, was brought out by G. R. Crotch. In 1885 Henshaw published his check list, later brought down to 1895, and this list, which has been out of print for two years, is still the one catalogue on which all coleopterists depend. During the last eighteen years the uncatalogued additional species bring the total of American beetles to about 20,000. The check list contains about 12,000 and a census of the describers of species places their number just under 300. At least 200 other describers have worked more recently.

The average collector wishes mainly that his species be correctly named and cares but little about the original namer. To the eyes of many the names of even Linnaeus, Leconte and Horn are familiar, but to their minds there occurs little or nothing about the men who had no check list for guidance, no divisions of tribes, save of their own creation. It is the purpose of this paper to present a little picture of a number of those men whose names will endure as long as scientific nomenclature. Most of these names appear in the list as abbreviations only, and for convenience each will be entered on the margin for ready reference.

Linn.

Carl Linné, the son of a Swedish clergyman, passed many years of poverty while working out a "System of Nature" which is the basis of all scientific nomenclature. Fame came to him in 1755. His binomial system stands unchanged to-day. He had the writings of Wray, London, 1724, in which the new system was clearly forecasted. He also had studied Aristotle, who mentioned about 90 species of insects 300 years B. C. He had also studied Swammerdam and Réaumur, a generation earlier than himself. He arrived at the psychological moment. All Europe became enthusiastic about nature study. Linné became professor at the University of Upsala, taught enormous classes, was ennobled, and ruled the scientific world for twenty years until he became a hopeless invalid.

Linné's genera were broad and his species were as numerous as a careful student could find time for, but he covered the whole field. Even at that, he set up 20 genera of beetles, and of his species 104 are in the American check list. Friends sent him specimens from Philadelphia, New Orleans and West Indies. His types, unfortunately, have suffered from relabeling and other misuse by subsequent owners.

At Upsala he found a student working for ten years previously on similar lines, Chas. De Geer, whose interest **De G.** in entomology leaned toward the economic side. This is the only contemporary of his earlier fame. De Geer named 22 American species. Of all Linné's scholars the one of about the least promise became the greatest. Johann Christian Schmidt was a Danish lad who caused his parents no **Fab.** little anxiety. Going to Upsala, he neglected the curriculum as much as possible, but on Linné's lectures he studied night and day. Upon graduation, realizing that nature study was too broad a field for any one, he confined himself to insects alone—the first entomologist. His prominent life endured about 30 years from 1775. He was feted by all Europe, lived like a prince, and, it must be confessed, put on more airs than a grand duke. Many volumes of descriptions of insects came from his pen. Of American beetles, 299 species bear his name, and of his coleopterous genera 43 concern America. At Upsala he latinized his name with the additional aggrandisement that Faber, the latin for Schmidt, was discarded for the more sonorous "Fabricius." In London Fabricius found a devotee of unusual talent. Dru Drury was a gold- **Drury.** smith 55 years old when they met. He spent almost his entire fortune on two volumes devoted to exotic lepidoptera, the colored plates of which were reprinted in 1845 and are still in print. He cared little for beetles, but named 10 species of showy American forms. He had good correspondents and got a great deal of American material, giving most of his American beetles to his friend Fabricius. Most of such types are now in Kiel, where Fabricius became professor of Natural History. The collection of the British Museum was studied, and every specimen bearing a Fabricius label is still jealously preserved unchanged.

We must bear in mind that transportation was slow in those days, and beetle collectors on this side not enthusiastic. Our people were too busy in the fight for existence to pick up useless "bugs." In 1800 less than 400 species of American coleoptera had been described, and for thirty years after that no European entomologist visited our shores. Occasionally mistakes were made. Drury received about the same time two boxes of specimens, one from Jamaica, West Indies, and the other from the partly wooded pasture land where now stands the terminus of Brooklyn Bridge and Plymouth Church. He confused the two. One Brooklyn type to this day bears the name *jamaicensis*. A cruel joke was played on Linné. A friend sailing for Surinam sent him all specimens collected on shipboard, which should be localized at Holland, the starting point. *Silvanus surinamensis*, the cosmopolitan granary pest, is one of many species to immortalize this foolish jest. Linné was almost killed by a chagrined collector who had a specimen of the nine-headed hydra, the stitches in which Linné was the first to discover.

Linné's pupils spread all over Europe. Within a few years
a coterie of Frenchmen under the leadership of the dis-
Geoff. tinguished Professor Geoffroy de Ste. Hilaire under-
took a catalogue of the insects to be found around Paris.
Through this undertaking Olivier became known. He, too,
wrote American friends for material, and added 87 Ameri-
Oliv. can species to the described list. He found a patron,
Count Dejean, the first great amateur collector. Dejean
Dej. spent money freely, and made a great collection. Cara-
bidae of the world were his specialty and 182 American
species, with 19 genera, were described by him prior to 1822.

Paris, however, was to contribute a greater name. During the revolution a proscribed priest was marching under guard to be transported to the penal settlement of New Caledonia. On the march, stooping over, he picked up a beetle. It was the "red legged ham beetle" originally described by Linné. He remarked aloud, "This is a new genus." A prominent citizen, in favor with the Government, overheard and accosted him. The modest priest confessed that he knew a little about beetles. His questioner was also interested and a friend of

Geoffroy, Olivier and Dejean. Further talk followed, and favor brought pardon to the priest, who all his life had never harmed
or even spoken ill of mortal man. Pierre Antoine La-
Lat. treille, still a priest, became the greatest authority of his
time on classification. The vessel on which he was to
have sailed was lost in a storm with all on board. His genus based on the ham beetle was named by him, *Necrobia*, life from the dead, a double meaning. It saved Latreille's life. It gets its own life from dead animal tissue. Latreille died in the fullness of years. His correspondence was large, that with Fabricius filling a whole volume of print. His American species were few, but 98 of his genera have American representatives. His divisions into families were wider than those accepted at present, but eleven of his families still stand unaltered.

J. G. A. Forster in 1771 sailed as a scientist on Capt. Cook's
second voyage. Returning he became professor of nat-
Forst. ural history at Cassel. His American beetle types were
not many, but they are all well known species. A con-
temporary, an amateur, F. W. Herbst, superintendent
Hrbst. of the water works at Zurich, Switzerland, loved
exotic beetles. His monument, to outlive his hydrants,
is 51 American species and 11 genera. The burden of synonymy came into existence about the time, for he, Drury and Olivier were getting specimens, which were promptly named without active correspondence between the namers.

Thunb. During the last quarter of the century the study
Payk. of insects became more and more popular. Most of
Knoch the familiar names were directly or indirectly pupils
Scriba at Upsala, who drifted in to professorships all over
Web. Europe. Their American coleoptera were not numer-
Pall. ous, less than 140 being credited to the whole group.
Goeze They taught, studied and spread loyally their pro-
Swed. paganda. Of this roster roll, Thunberg succeeded
Web. Linnaeus as professor at Upsala. Paykull was at
Ill. Upsala, Knoch at Brunswick, Panzer at Nuremberg,
Schn. Scriba at Frankfort, Goeze at Leipsic, Swederus,
Hoppe Weber in Denmark; Illiger in Berlin; Schneider, Pall,
Ced. Hellmuth, Hoppe at Hanover; Ahrens, Brahm at

Duv. Mayence; Cedarhejlm at Leipsic; Duval at Regens-
Fröh. burg; Fröhlich, Kugelan, Reich, Clairville in Switzer-
Kug. land; Bergstrasser at Hanover. In this list there is
Reich. only one French name. The new study flourished
Clairv. best in German soil, but Sweden maintained possibly
Berg. supremacy up to 1800 through the great University
Panz. at Upsala.

The Enemies of a Plant Louse.

By Chris. E. Olsen, Maspeth, L. I.

During the past summer I was much interested in the scale insect which I believe to be *Pseudococcus citri* Risso, which were very abundant in two well defined localities in Blissville and Greenpoint. Some were taken home for observation as to their enemies. The following is the result:

In the **Family Coccinellidæ:**

Megilla fuscilabris Muls.—Four specimens were taken feeding on the mature bugs, not common.

Hippodamia 5-signata Kirby.—Of this species six were captured feeding on the bugs in all their stages, uncommon. (This species is not in the New Jersey List.)*

H. glacialis Fabr.—Of this only two were taken, and it seems to be the rarest of all.

H. convergens Guer.—This occurred very commonly at all times (except between the broods), and was bred from eggs to maturity on the bugs.

H. 13-punctata Linn.—Of this seven were taken.

H. parenthesis Say.—Eight were taken of this.

Adaliabipunctata Linn.—This was one of the commonest of all, and was bred from eggs to maturity on the bugs. A small hymenopterous parasite was reared from this species.

Coccinella 9-notata Hbst.—This species was very common, and being of a good size they naturally consumed a large number of bugs, but unfortunately, the species disappears very early in the season.

---

*This species has a northern range across the continent and its occurrence on Long Island is interesting. Of the boreal insects which reach this vicinity the path of travel is apparently via New England and the east end of the Island rather than down the Hudson River Valley.—Eds.

Cycloneda sanguinea Linn.—Scarce, only three taken.

Hyperaspis fimbriolata Mels.—Very common, feeding mostly on the younger bugs. A large number of parasites were reared from the larvæ of this species, at least two species of Hymenoptera.

In the **Family Chrysopidæ:**

Crysopa oculata Say.—Common, bred from eggs to maturity on the bugs. A small Hymenoptera reared from this.

In the **Order Hemiptera:**

Triphleps insidiosus Say.—This was very actively feeding on the young bugs, and brought to maturity on them. A spider belonging to the Family Thomisidæ was probably feeding on them although not actually observed.

With the exception of this last mentioned spider all have been seen to feed voraciously on the bugs in their various stages.

Lepidoptera.—By beating oak at Central Park, April 5, *Jodia rufago* and *Copipanolis cubilis* were taken in numbers. Both are considered locally extremely rare. Beating dead branches in spring and late fall has yielded very good results.

Proceedings of The Brooklyn Entomological Society.

The regular meeting of the Brooklyn Entomological Society was held December 12 at 55 Stuyvesant Avenue, with fourteen members and two visitors present.

Mr. Wm. T. Davis gave an account of a visit he and Mr. Chas. Schaeffer had made to Wading River, Long Island, N. Y., during the early part August, 1912.

Facing the Sound the bluffs rise to a height of about one hundred feet with an occasional bight extending inland. These little valleys were extremely picturesque and were good collecting grounds. The beach was of white sand and pebbles with an occasional huge drift boulder. *Cicindela dorsalis* was not seen.

A little less than two miles south of the shore the character of the country suddenly changes, becoming more level, and the pitch pine is one of the principal trees. Unfortunately, much of the country has been blackened by fire. Deep Pond, or Deer Pond as it is called on some maps, was visited and a day spent in collecting along its shores. The pond is oval in shape, has no outlet and is surrounded by high banks. No definite stream flows into it. The shore is sandy at the northerly and southerly ends. In the mixed woods of pines and oaks that surround the pond three species of Cicadas were singing.

They were *C. marginata* in considerable numbers; *C. canicularis*, apparently confined to the groves of pines, and a few *C. lyricen*. Not far away from the pond and along a sandy road the Cicada killer (*Sphecius speciosus*) had a colony. These large ground hornets were flying about the trees, carefully examining many of the branches for their prey. They apparently were not at all attracted by the songs of the Cicadas but depended upon other means than sound for locating them. *Cicindela repanda* was in some numbers on the sandy shore, and one *C. rugifrons* and one *C. generosa* were also collected. At a later date the last mentioned two species would no doubt have been more numerous.

A day was also devoted to exploring and collecting about Long Pond, which lies a little over two miles north of the Sound shore, and is in part margined by white sand. At this suitable environment, though at some distance from the beach, a colony of the maritime grasshopper (*Trimerotropis maritima*) was found. This species sometimes occurs far inland providing the surroundings are suitable.

Among the hymenoptera taken on this occasion were *Trypoxylon clavatum* and *tridentatum*.

Mr. Shoemaker narrated the events of a collecting trip to Malaga, N. Y., principally beating and sweeping through woods of pine and dogwood. He took 100 species of coleoptera, including 14 buprestids and 3 longicorns.

R. P. Dow,
Secretary.

In the proceedings of the November meeting the records presented by Mr. Doll should be *Papaipema sciata* (not *limpida*), larva on *Veronica virginica*, Jamaica, L. I. The specimens feeding on *Baptisia tinctoria* are *Papaipema baptisiae*, from Central Park, L. I. *Atethmia rectifascia* is also from Central Park.

A regular meeting of the Brooklyn Entomological Society was held at 55 Stuyvesant Avenue, January 16, 1913, with eighteen members and two visitors present.

The present officers were all re-elected:

Wm. T. Davis, *President.*
Wm. T. Bather, *Vice-President.*
Chris. E. Olsen, *Treasurer.*
R. P. Dow, *Secretary.*
Silas C. Wheat, *Librarian.*
Geo. Franck, *Treasurer.*

Executive Committee: above officers and J. R. de la Torre-Bueno.

Publication Committee: Chas. L. Pollard, Chas. Schaeffer and the Secretary.

Delegate to the Academy of Sciences: Chas. E. Sleight.

Auditing Committee: W. T. Bather, Chas. Schaeffer.

Mr. Davis exhibited, as a Long Island record, *Autographa rectilineata*, a boreal creature, taken July 27, by beating oak leaves, killed by *Elaphidion macronatum*.

Mr. Martin exhibited a collection of the past year, mostly coleoptera, from Saranac River, N. Y., Lakehurst, N. J., and points on Long Island. Among the notabilities were a black *Attelabus rhois* from the Adirondacks, *Callidium janthinum* from Brooklyn, a Long Island record, and *Helluomorpha nigripennis*, always rare and generally occurring singly, from Lakehurst.

Mr. Torre-Bueno spoke on the Capsidæ generally and many rare hemiptera. In faunal lists of Europe, Central America, India, etc., the Capsidæ contribute about one-third of the heteropterous hemiptera. By analogy the number in the New Jersey fauna ought to reach 175 and there should be no less from Long Island, with its rare combination of Southern and Northern occurrences. Among rarities, Mr. Bueno mentioned: *Cymus discors*, confused with but quite distinct from the European *claviculus*, taken in Westchester County by sweeping cat-tail stems; *Blissus hirtus*, taken at White Plains, type from Pennsylvania; *Cryphulla parallelogramma*, under stones; *Xestocois nitens*, from New York State and Claremont, N. H.; *Gargaphia angulata*, from New Haven, Conn., reported in beans; *Orthostira*, a new species, hibernates as a nymph and occurs at White Plains in both long and short winged forms; *Pagasa fusca*, also known as *nitida*, under dry weeds or leaves in sandy places; *Carthasis decorata* very few ever taken, found by beating willow, a record for New York State. Other records, Washington, D. C., Maryland, *Merragata hebroides*, described from Hawaii, next taken in Mexico, now turns up in Yaphank, Long Island, in the wingless form heretofore unknown. It occurs in grasses near water and is recorded from Staten Island and Illinois.

R. P. Dow,
Secretary.

Long Island Records.

Lest any reader should question the wisdom of devoting a large proportion of short notes in the Bulletin to captures of rarities on Long Island, it may be well to explain now that in the distant future a list of insects found on the Island ought to and will be produced. Anyone possessing such records will confer great benefit by communicating them to the Editor.

IDENTIFICATIONS—The Secretary sets apart the hour from 12 to 1, Mondays, Tuesdays, Thursdays and Fridays, at his office, 15 Broad St., Manhattan, room 9, Ninth floor, to receive visitors interested in Entomology, and aid them, if possible, to identify, especially Coleoptera and Lepidoptera. Beginners will be made especially welcome.

The Publication Committee will be glad to receive names and addresses of those to whom sample copies of the BULLETIN should be sent.

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Vol. VIII APRIL, 1913 No. 4

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OF THE

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CHARLES SCHAEFFER
J. R. de la TORRE-BUENO ROBERT P. DOW

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BULLETIN
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Four New Additions to Our Local List of Rhopalocera

By F. E. WATSON, New York.

Argynnis aphrodite, var. alcestis, Edw.

One fine female of this variety was taken by the writer in Van Cortlandt Park, New York City, July 16, 1900. The specimen was captured in the hilly section of the park.

This individual agrees with typical specimens of *alcestis* from Illinois and Minnesota in the writer's collection and also agrees with the figures and description in Edward's "Butterflies of North America."

Through the kindness of Mr. Wm. P. Comstock this specimen was taken to Philadelphia and shown to Dr. Skinner, who pronounced it an average specimen of *alcestis*. I wish to express my thanks to Dr. Skinner and Mr. Comstock for their assistance in establishing this record.

Basilarchia archippus, var. lanthanis, Cook & Watson

One male captured Aug. 13, 1911 at Athenia, N. J., and one male June 23, 1912, at Pearl River, N. Y., by the writer. This is a biological variety* and should not be confused with the aberrant *pseudodorippus* of Strecker.

These two forms have one character common, viz.: the extramesial black stripe on the upper side of the secondaries being obsolete.

Tachyris margarita Hüb. (ilaire, Godart)

Two specimens were seen and one captured June 10, 1906, at Canarsie, Long Island, by Mr. Otto Mayer, in a field containing an occasional patch of scrub and partly hemmed in with truck gardens. The one captured was on blackberry blossoms.

* See *Canadian Entomologist*, Vol. XLI, page 77.

Although Mr. Mayer visited this field subsequently in 1906, and again in June, 1907, no more specimens were seen, and this occurrence may be accidental. We believe this to be the most Northern record for the species. The specimen is in the writer's collection.

Amblyscirtes samoset, Scud.

This species was first captured in this vicinity by Mr. C. H. Sunderland, who took one specimen July 4, 1903 in the Ramapo Mountain region (definite locality, Sloatsburg, N. Y.). June 25, 1905, the writer captured three males in the same locality. All four were taken along the roads.

The above record is equivalent to adding this species to the New Jersey list, as Sloatsburg is only about 2½ miles from the State line. In Smith's Catalogue of the Insects of New Jersey, samoset is noted as of probable occurrence.

Bomolocha atomaria Smith, in Connecticut.

By L. B. Woodruff, New York.

For several years there has been in my collection a species of *Bomolocha* which I had not placed. It was there represented by four specimens, two males and two females, taken at light and at sugar at Litchfield, Connecticut, in the months of June and August, 1905-1908. Recently I had the opportunity to compare them with the type and co-type of Dr. John B. Smith's *B. atomaria*, males taken at Volga, South Dakota, now contained in the collection of the New Jersey Agricultural Experiment Station at New Brunswick, N. J., and found them to be undoubtedly the same species.

Dr. Smith described *B. atomaria* in Trans. Am. Ent. Soc. XXIX p. 216, June 1903, from four male examples, all from Volga, South Dakota. The females taken at Litchfield are like the males in pattern, but in them the t. a. line is obsolete. They also average slightly larger, and the gray shades of the males are replaced by a yellowish tinge. It might be well to point out that in the s. t. line on the fore wings there is a strong inward sinuation of its lower half, a marked character present in the type and in all the specimens seen by me, though varying somewhat in degree. The original description fails to make mention of this fact.

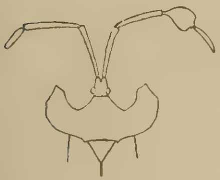
This record from the hills of Connecticut thus marks an extreme easterly extension of the known range of the species, and is suggestive that a general boreal distribution may be found when the dusty "brown millers" are more generally studied.

A question of synonymy also presents itself in connection with this species. Dr. Harrison G. Dyar, in Proc. Ent. Soc. of Wash. VI, No. 2 p. 105, April 1904, described a *Bomolocha* as *B. chicagonis*, based upon a female taken at Chicago; at the same time citing another paler specimen taken in North Dakota. Here it is pointed out, that the t. a. line is obsolete, as is the case in the females of *B. atomaria* before me. A comparison of the descriptions shows no specific character to distinguish *B. chicagonis* from *B. atomaria* Smith; and direct comparison of two males in the Smith collection at New Brunswick bearing written labels marked "*B. chicagonis* Dyar, June '04, Milwaukee" (the history of which I was unable to discover) with the male type of *B. atomaria* impelled me to the conclusion that they were conspecific. With this conclusion Dr. Dyar writes that he is disposed to agree, though he has not seen the type of *B. atomaria* Smith. As Dr. Smith's name has priority in date of publication over *chicagonis* Dyar, the latter must fall.

A Curious Deformity in a Bug.

By J. R. de la Torre Bueno, White Plains, N. Y.

From time to time, all entomologists who collect extensively meet with some insect abnormality more or less pronounced and interesting. Some time since I came into possession of a lot of insects from Central Cachar, British India, collected by J. Woods-Mason, which, among other rare and interesting species contained a fine specimen of *Dalader acuticosta*, A. & S., that curious form which has the pronotum with very prominent lateral angles, and which resembles our American *Chariesterus* and *Thasus* in having the 3rd antennal joint foliaceously ampliated. My example, at



first sight and to my regret, appeared imperfect due to the absence of the ampliated joint of the left antenna. Of course, it is not always easy to determine in the simple jointed antennae whether a missing joint has been broken off or is a structural defect, but where a conspicuously shaped one is absent, as in this case, it can be established satisfactorily, as a careful examination served to demonstrate. The absence of this joint left only three joints in the left antenna, and these remaining joints differ noticeably from the corresponding ones in the perfect side. The first joint is shorter and stouter than in the perfect right; the second joint, however, is 7mm. long as against 5.4 mm. and noticeably thicker. The terminal joint, on the other hand, is shorter than the 4th joint on the right side and also stouter. The imperfect antenna, as a whole, nevertheless, is not greatly shorter than the other.

Whether it is merely a *lusus naturae*, or an attempt to repair an injury received in the nymphal state is difficult to determine, and I shall not attempt it.

Long Island Capsids.

The following list of Miridae (Capsidae) is of interest for their range extending into Long Island (previous records noted in parenthesis):

Psallus juniperi, Heid.
  Hempstead, VII. 21.—beaten from Cedar.
P. ancorifer, Fieb.
  North Beach VII. 4.—(D. C.).
Rhinocapsus vanduzeei, Uhl.
  Bayshore VII. 4-7.—(Northern States and Canada).
Orectoderus obliquus, Uhl.
  Bayshore VII. 4. and Rockaway Beach VI. 24. (Western States).
Hadronema militaris, Uhl.
  Very common on the Cow Pea at Yaphank V. 30.—only one specimen taken same locality VII. 4.—(Colo., Utah, Calif.).
Trigonotylus tarsalis, Reut.
  Newtown Height VI. 19.—Yaphank VII. 4.—(Wis. Tex.).
Phytocoris mundus, Reut.
  Bayshore VII.—IX. (Md. D. C.).

P. antennalis, Reut.

Bayshore VII. 4.—Yaphank VII. 4.—(D. C. Fla.).

P. conspersipes, Reut.

Bayshore IX. 19.—(D. C.).

Dichrooscsytus elegans, Uhl.

Yaphank VII. 4.—(Ariz.).

Lygus plagiatus, Uhl.

Maspeth I—IV. my specimens all taken sifting.

Pithanus maekeli, H-Schf.

Maspeth VI. 7.—I have been informed by Mr. O. Heidemann that this species has not heretofore been recorded from the U. S. and it adds another genus to our North American list as well. Common in Europe.

Chris. E. Olsen,
Maspeth, L. I.

A New Aberration of Smerinthus

By George Franck, Brooklyn, N. Y.

Smerinthus jamaicensis, Dru., ab. Clarkii, Nov.

General color smoky black.

Primaries with a broad marginal band of a more intense black.

Secondaries uniformly smoky black.

Underside, general color smoky black, corresponding with the upper side. All traces of the lighter and darker shades of the brown and white in primaries and the red color and eye spots of secondaries entirely obliterated.

Thorax showing the distinct markings of *geminatus*. A broad longitudinal band through the middle, with lighter shadings on the sides.

Head, antennæ, feet and abdomen, the same smoky black of the wings.

This remarkable insect, I believe, stands isolated in Sphingidæ—at least I can find no similar record of any *Smerinthus* or kindred genus showing such remarkable differences between typical specimen and the aberration.

It was taken by Mr. A. Lehnert near Coney Island, N. Y.

I dedicate this remarkable insect to my esteemed friend, Mr. B. Preston Clark.

Type in collection of Mr. Adolph Chudoba, Brooklyn, N. Y.

Dragon Flies of the Genus Celithemis found on Long Island, N. Y.

South of the village of Wading River there are two interesting clear-water ponds that have no streams flowing from them. They are surrounded for the most part by pine woods that have been much damaged by fire. Mr. Charles Schaeffer and I collected many insects about these wood-land ponds in August, 1912, and on the 8th of the month, along the white sandy shore at the southerly end of Long Pond, I found two specimens of *Celithemis monomelaena* Williamson, one of which, a male, was captured. In maculation this specimen agrees with Williamson's species, described in the Ohio Naturalist, vol. X, p. 155, 1910. The species recorded under the name of *fasciata*, Kirby, has been taken in Southern New Jersey and about the Great Falls of the Potomac River in Virginia, but I believe has never before been reported from Long Island or adjacent territory along the Atlantic coast. From the literature and from our own experience it appears to prefer clear-water ponds. Another unrecorded Long Island *Celithemis* is *ornata* Rambur, which has been taken at Yaphank in July and August, and at Long Pond, Wading River, in August. The two remaining local species of the genus are *C. elisa* Hagen, which has been collected at Yaphank in July, Wading River in August, and Flushing in August, and *C. eponina* Drury found at Flushing in August. The last two are, however, more widely distributed.

Wm. T. Davis.

A Plague of Carolina Grasshoppers at Long Beach, Long Island, in 1912.

The Carolina grasshopper (*Dissosteira carolina*, Linn) was in countless numbers at Long Beach, Long Island, N. Y., during the summer of 1912. On July 10 they were on the lawns near the hotel, on the walks and on the beach down to the edge of the waves. These last were feeding on the vegetable matter thrown ashore by the sea. On the up-beach they were eating anything they could find, and five were observed about one small piece of orange peel and twelve others about a second bit about as large as a silver dollar. When we sat on the sand to eat lunch we had to look out for the grasshoppers, for directly two nymphs were eating one of the crackers. Later we fed one of them by hand. He would seize the piece of cracker and hold it in his fore legs while it was being devoured. Beyond the end of the board walk to the eastward, and further from the grass plats, the grasshoppers were not so numerous. Some had reached the winged stage, but most of them were immature.

We had never seen the Carolina grasshopper in such numbers, and on this occasion he certainly escaped most of his enemies.

WM. T. DAVIS.

The Makers of Coleopterous Species

By R. P. Dow, Brooklyn, N. Y.

There is little about the close of the 18th century to mark an epoch in the history of beetle describing, although the Napoleonic wars were an enormous handicap for over fifteen years. The date parting an old and a new regime was rather the Anglo-American war 1812-1814. During this time all traffic ceased between the United States and Europe. The study was actively carried on, and by 1815 the insects of Europe were described as fully as they were in America—say, in 1865. During the first decade of the century most of Linné's personal pupils paid their debt to nature. The new arrivals in the field were numerous, but few left their mark on American species. A notable **Bon.** of this period was Professor Bonelli of Turin, Italy, a country hitherto not represented conspicuously in nature study. Bonelli lived until 1830, and was at his prime in 1812. His great work was an attempt to classify the Carabidae. The ten genera of that family which concern the United States are all among the largest and best known. His species are scattering and number 35. The best French beetle man **Beauv.** of this time was J. F. Palisot de Beauvois, whose work dates from 1805. His monographs included illustrations, and his American species numbered about 35. On the whole, German scholarship continued to lead the world. **Hellw.** Professor Hellwig contributed his mite of a dozen **Duft.** genera and species. Professor Duftschmidt was teaching in Austria, and has a few species to his credit. **Sch.** Professor C. J. Schonherr, working at Stockholm, published extensively from 1806 to 1846, and was re-

garded as the greatest cuculionidist of his time. Maj. Leonard
Gyllenhal was his friend and, at times, co-worker. The
Gyll. latter has 80 species and three genera to his credit. Ger-
mar was a professor of mineralogy, but he loved beetles
Germ. well enough to describe 69 species and 23 genera of
American material. Professor Hoppe at Hanover, born
Hoppe 1760, lived until 1846. Gravenhörst worked in Bruns-
Grav. wick from 1802 to 1841. He worked carefully over
the Staphylinidae, having 85 American species and
Ahr. 10 genera to his credit. Ahrens was at Halle and
Steph. added a few species. Stephens, in England, born 1792,
added 9 species and 39 genera.

At this point, one must revert slightly to the first American collector. A clergyman, Rev. F. V. Melsheimer, a pupil of Professor Knoch of Brunswick, had settled in the interior of Pennsylvania, and made a beetle collection, the types of which, fortunately, exist to-day. In addition he actually published in 1806 a brave attempt at a catalogue of the beetles of Pennsylvania. He corresponded constantly with Dr. Knoch, but often specimens forwarded for comparison were not returned within a year and sometimes lost altogether. For information regarding
this remarkable man, whose misfortune it was to be
Melsh. overshadowed by Thomas Say, every lover of beetles
should read the article by Dr. H. Hagen in the Canadian
Entomologist, Vol. 16, p. 192, and another with original documents by E. A. Schwartz in Proc. Ent. Soc., Wash., Vol. 3, p. 134. The species credited by the check list to Melsheimer are 220, but his collections were merged with those of his two sons, both eminent in the beetle world. Over half a century later Prof. Louis Agassiz bought this whole collection for the Cambridge Museum. Dr. Leconte took out most of the types and kept them in his own cabinet until his death. The understanding made then about the final disposition of the Leconte collection was finally carried out, everything reverting to the Cambridge Museum.

The period 1817 to 1834 marks the greatest epoch of coleopterous study. This period begins with the activity and ends
with the death of Thomas Say, styled by acclamation the
Say "Father of American Entomology. A biography of this
remarkable man is included in the reprint of his works,

edited by Leconte. Poverty, always comparative, sometimes extreme, was his lot. For some years he was accustomed to sleep on a bench in the collection hall of the Philadelphia Academy of Sciences, which body had begun to have importance from about 1812. Say's expenses for food at that time averaged about six cents a day. His entomological articles were notable from 1817. A year later he joined an expedition for Florida, collecting much in Georgia, but failing to attain the sought for prize. The Indians made life unsafe in Florida, and the state remained *terra incognita* for twenty years longer. Soon afterwards he penetrated the far West to Colorado, about fifteen hundred miles into the unknown wilderness. The common, almost cosmopolitan, potato beetle of to-day, was discovered by him in Colorado, feeding upon a solanaceous weed. On his return, he accepted a position to manage a land company in the southwest corner of Indiana. Here he lived in disappointment and ill health for nine years, always collecting, publishing and corresponding. It may seem strange that such a man should have only 734 species of beetle to his credit in the check list, but it must be remembered that he studied all orders of insects, mollusks and even considered with Audubon great works on mammals and birds. His work, also, was very carefully done. His types, alas, do not exist. His descriptions have never been excelled in clearness. He had a marvelous faculty for expressing the salient characters of an insect in the fewest possible words. At the time of his death the numbers of described American beetles scarcely exceeded 1,500. Three-fourths of the territory of the United States was then uninhabited by civilized peoples, and of the area of Canada not one-twentieth was anything but unbroken wilderness.

In spite of his poverty Say was too enthusiastic a collector to part with insects for money, although foreign collectors were willing to pay well for new things. The one exception on record was the type of *Amblychila cylindriformis*. It was an unique, a male. When the news reached London that Say had caught a Cicindelid an inch and a half long, of a new genus, an enthusiast bid $300 gold for the specimen, and Say accepted it. Both sides were quite satisfied, for as luck would have it, a second specimen was not captured until about twenty years later.

The ultimate fate of Say's collection makes one regret that he did not sell every specimen. After his death his whole collection of insects was put in a wagon and sent from New Harmony to Philadelphia, during which journey, no doubt, the damage from jostling was great. By some remarkable oversight the great pile of boxes was stored unopened in Philadelphia and forgotten! Nearly twenty years later it was resurrected and sent to Thaddeus W. Harris, State Entomologist of Massachusetts, and a very notable man. It was thought that Harris could put it in shape better than anyone else, as he was certainly the best general entomologist in the country. The second trip of the collection was by ship to Boston, thence by wagon to its destination. Dr. Harris found it so infested with *Dermestes* and *Anthrenus* that it was too dangerous to take it into his own house to carry infestation to his own collection. Say's boxes were home-made, loose, and (from rough usage, etc.) more or less dilapidated. So Harris stored them in the College Library and wrote to Philadelphia asking authority to buy new boxes, etc. Either the letter miscarried or there occurred another unaccountable piece of neglect. Three years later Dr. Harris received a letter from Philadelphia asking for the return of the collection. When it arrived it was a mass of pins, labels, wings and dust, with more cast skins of *Dermestes* than anything else. In this way probably 3,000 insect types—the most notable collection possible in American history—were lost to science.

A Hemipterous Cannibal.—While carrying on some of my breeding experiments I noticed a very queer conduct of *Cosmopepla carnifex.* I had collected for observation about 15 specimens of this species and placed them in a tumbler covered with muslin.

In a few days a cluster of eggs had been deposited on the food-plant (moth mullein), and to my surprise five of these eggs had been completely drained, and only the caved-in transparent shells remained in place of the greenish-yellow eggs.

I concluded that something unusual was taking place, and it was now for me to find out who the wretched beast was. Unfortunately my time was very limited, so I had to depend on my luck to catch the offender. This draining kept up right along for about two weeks. Just as soon as a cluster had been deposited it was attacked. Finally I discovered a male in act of sucking the eggs dry. Two clusters had been deposited that day, one containing nine eggs and the other twelve. The nine had been completely drained, seven of the twelve were empty, and he was enjoying the eighth. Upon being disturbed he immediately retreated.

C. E. OLSEN.

Coleoptera.—In June Mr. Nicolay found excellent collecting among dying trees on the Peninsula two miles east of Bellport, L. I. *Phloeotrya vandoueri*, Mul., (No. 7671 Henshaw), was taken under bark, *Helluomorpha nigripennis*, Dej. sweeping dead leaves. *Necrophorus pustulatus*, Hrbst., was found under dead wet pine bark, with no appropriate food in sight.

Proceedings of the Brooklyn Entomological Society.

The regular monthly meeting of the Brooklyn Entomological Society was held at 55 Stuyvesant Ave., Feb. 13, 1913, with seventeen members present.

An Outing Committee for the year was appointed: Chris. E. Olsen, Jefferson Ave., Maspeth, L. I., and F. M. Schott, 854 Bushwick Ave., Brooklyn. Both members are unusually well acquainted with the best hunting grounds of Long Island.

The Publication Committee read a letter from Mr. Chas. Louis Pollard, in which he stated that his recent family bereavement, and nervous strain, resulting in ill health, necessitated his resignation as a member of the Committee.

The resignation was accepted with regret. It was voted that the thanks of the Society be accorded to Mr. Pollard, upon whom rested the chief burden of preparing the first two numbers of the Bulletin.

Mr. Davis reported the capture in June on Gardiner's Island of *Canthon vigilans*, a new local record, and the always rare *Helluomorpha bicolor*.

Mr. Brehme exhibited a collection of series of *Apantesis* of North America, most of them being bred specimens with few species lacking. A prize was *A. nervosa*, a caught specimen from Queens County, L. I. This species has not been recorded from New Jersey. The collection was arranged according to variation in color and maculation of each species.

Mr. Bather described a visit last June to Lisbon, Portugal, during which he imbibed much of the Republican spirit of the country, even to the extent of wearing the national cockade and facing a squad of cavalry sent to subdue the unexpectedly riotous mob in which he found himself. The collapse of a doorway and hurried exit through buildings into another street saved our entomologist from further mishap.

In the market places he found a busy trade in live black field crickets, for which wire cages were constructed, some simple, others elaborate with two stories. Almost every household boasted a pair, at least, of these crickets, the song of which is not as shrill as that of our species, but is on a lower key and sustained. The people find the music enjoyable and believe firmly that the crickets bring luck. It was reported to him that the crickets live in captivity eighteen months and even two years. They are fed daily on fresh vegetation.

Dr. Wm. Barnes, of Decatur, Ill., a life member of the Society, whose attendance is as frequent as the distance permits, spoke of the progress of his collection of North American Lepidoptera, which is arranged according to the classification of the order prepared by Sir George F. Hampson, of the British Museum. He regards correct determination as of the greatest importance, every species being compared with the type, if in existence. A new fireproof museum, 30 by 40 feet of hollow tile, cement and steel girders, with three skylights, 6 by 12 feet, is being built to house it. The present building is to be retained to house duplicates.

Dr. Barnes spoke of one accession last summer of 12,000 specimens from a collector along Kern River, Cal., and a big shipment from the Yukon. The force of spreaders can hardly get the 1912 catch prepared by the time the 1913 accessions come in. An item not generally known is that the famous Merrick collection of New Brighton, Pa., was acquired last fall, its former owner feeling that by this disposition all the specimens of determinative value will be best preserved to posterity. Several other complete collections were merged during the year. The Barnes collection now contains over 1,200 types and co-types. It is arranged through the Pyraloidea, and is to be made as complete as possible through the remainder of the Microlepidoptera.

Although Barnes and McDunnough are themselves publishing their taxonomic and other papers, Dr. Barnes promises that the columns of the Bulletin shall not be forgotten.

At a meeting of the Executive Committee Mr. J. R. de la Torre-Bueno was elected a member of the Publication Committee, to succeed Mr. Pollard.

R. P. Dow,
Secretary.

IDENTIFICATIONS—The Secretary sets apart the hour from 12 to 1, Mondays, Tuesdays, Thursdays and Fridays, at his office, 15 Broad St., Manhattan, room 9, Ninth floor, to receive visitors interested in Entomology, and aid them, if possible, to identify, especially Coleoptera and Lepidoptera. Beginners will be made especially welcome.

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Vol. VIII JUNE, 1913 No. 5

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OF THE

BROOKLYN ENTOMOLOGICAL SOCIETY

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1872

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BULLETIN
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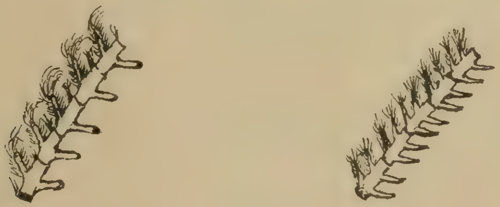
BROOKLYN ENTOMOLOGICAL SOCIETY

Vol. VIII June 1913 No. 5

Short Studies in Geometridae. No. 1

By Richard F. Pearsall, Brooklyn, N. Y.

When entomology was young in this country it is not surprising that European names were adopted for our species, when of close superficial appearance. That many of them should not be perpetuated I feel convinced, and in this series of papers I shall expect to show where some of them are erroneous. The name *Petrophora incursata*, Hub., appears in Dyar's List as No. 3449, with various synonyms applying to this European species, but purports to cover also one of our forms, of which I have several examples from Colorado. Placing beside these a fine male of *incursata*, received through Mr. Prout, and therefore genuine, the resemblance is easily perceived. The same soft tone in coloring with its ruddy tint in the male is common to both, but the cross lines seemed to vary a little and induced a closer study. This revealed a structural difference in the antennae which I have here delineated and which makes it necessary to separate our American form and give it a name. Doubtless a comparison of the genitalia would also prove specific difference, but I have not thought it necessary to destroy my scant materia



Antennae of

Petrophora incursata Hub. *(European, much enlarged)*

Petrophora salvata n. sp. *(American, much enlarged)* to obtain further proof. Comparison with its European ally would not be possible to many, so that I give to our species a name and full description, placing it for the present in the same genus.

Petrophora salvata n. sp.

Expanse 29-30 mm. Palpi projecting well beyond front, slender, dark gray brown, tipped with paler. Antennae dark gray, bipectinate in the ♂, slender and threadlike, shortly ciliate beneath in the ♀. Front rounded, of gray brown and white scales intermixed; a small interpalpal tuft. Thorax dark brown mixed with white scales dorsally, on the patagiae at sides, and heavily over the scutellar region. Abdomen dusky white with a slight mixture of brown scales. The second, third, fourth and fifth segments anally margined with black. Primaries rather produced and pointed at apex with costa strongly arched. Basal line crosses very close to base, rounding out strongly at costa, then receding somewhat to inner margin, the enclosed space dark gray. The intra and extra discal lines are both double, forming bands, the former in width about half the latter. It leaves costa one-third out, rounding out slightly on crossing, thence straight to inner margin. The broad space between it and basal line, and at centre of wing, is nearly clear of dark scales, and assumes a bluish gray cast. A trace of wavy gray lines sometimes appears in former, and the small round black discal dot is conspicuous in the latter. The outer line of extra discal band leaves costa about two-thirds out, with an inward curve to vein m^1, and another to vein m^3, thus forming a small angle at both, thence in a series of outward waves between veins, reaches inner margin near to anal angle, its general course being nearly straight across wing. The inner line leaves costa at centre, makes a sharp outward angle just below costa, then parallels the outer line in a similar series of waves, to inner margin at centre. These bands are filled with black and dark brown scales to a point just below cell in the former, and to vein m^3 in the latter whence to inner margin they are of the pale ground color, except an occasional darkening just at inner margin. A pale band parallels the outer line of extra discal across wing, sometimes nearly white, and the dusky submarginal space outside this is traversed centrally by a white or pale line having two or three teeth below costa pointing outward, and filled in basally with black or dark brown scales then crenulate to anal angle. Marginal line brownish black. Fringes gray brown, with a pale line at base. Secondaries rather long, outer margin much rounded, their ground color that of primaries, dusky brown or grayish, the pale band outside extra discal on primaries being continued across secondaries nearly parallel to outer margin and bordered inwardly by a dusky crenulate line, marked at vein crossings with dots of dark scales—and outwardly by a similar crenulate line without dots. Marginal line and fringes as in primaries; discal dots round, faint. Beneath, all wings are dusky brown, or grayish white, thinly speckled with darker scales. The outer extra discal marginal line crosses both wings as above, heavier at costa on primaries, the inner, heavy at costa, fades out below it. On secondaries margined as above. The discal dots large round and prominent black. Marginal lines and fringes as above. Body and legs beneath gray white *sprinkled* with dark brown or black scales.

Types—one ♂ from Chimney Gulch, Golden, Colo. (Oslar) VIII. 28, 1908, and one ♀ from Southwestern Colorado (Oslar) VIII. 17, 1907, and three cotypes from the same locality, all in author's collection. The ♀ is inclined to be grayish rather than the ruddy gray brown of the males.

A New Pygarctia from Florida.

By Wm. T. Davis, New Brighton, Staten Island, N. Y.

On the 22nd of April, 1912, the author collected at one of the electric lights at Fort Myers, Florida, a *Pygarctia*. This when spread was compared with four specimens in the collection of Mrs. Slosson from Lake Worth, Fla., labeled *Pygarctia abdominalis*, Grote, and found to agree in every particular. All of these moths have the forewings bordered with bright orange, but agree in size and in having the collar unicolorous with the figure of *P. abdominalis* in Holland's "Moth Book," and with that in Sir George F. Hampson's "Catalogue of the Lepidoptera Phalaenae." They, however, do not agree with two males taken by the author at Lakehurst, N. J., May 29, 1905, and June 13, 1908, recorded as *Pygarctia abdominalis* in the recent edition of the "Insects of New Jersey." These last are larger, have the collar except the hind margin all gray, and the front clouded with the same color. It was at first thought from the weight of authority that the last mentioned identification was wrong and that we had a new *Pygarctia* from New Jersey.

The original description of *Pygarctia abdominalis* was published in the "Canadian Entomologist," vol. 3, p. 124, 1871, and Mr. Grote says there of his specimen, collected at Demopolis, Ala., "Collar tegulae and thoracic disk lead color with a light reflection and more or less obviously margined with orange scales and shades." As the size given is 44 mm. this supported the identification of the New Jersey specimens as *abdominalis*, and there would have been no doubt about it if Mr. Grote had placed a comma after the word "collar," because in both species the tegulae are gray margined with orange or yellow. Mr. Samuel Henshaw kindly settled the doubt by examining the type which had been turned over to the Museum of Comparative Zoology, Cambridge, Mass., in 1884, by the Peabody Academy, where it was originally deposited. This examination showed that the collar is gray in the type, margined with orange and consequently that the New Jersey specimens were correctly identified.

The species from Florida I take pleasure in naming after my friend Mr. John A. Grossbeck, who with Dr. James McDunnough collected insects with me in the spring of 1912. The following description is in form like that of Mr. Grote's, so that comparison can be more easily made.

Pygarctia grossbecki, sp. n.

The wings are lead color. The costal region of the forewings above and below is striped with bright orange as is the internal margin. The hindwings are concolorous immaculate. Abdomen above bright orange, with a dorsal series of distinct segmentary black spots; there is also a lateral series of black points; beneath it is lead color. Head bright orange, also the palpi except the tips which are dark. Legs dark lead color; fore coxae orange. Collar bright orange; tegulae and thoracic disc lead color and margined with bright orange. Expanse 32 mm. female.

The four specimens in the collection of Mrs. Slosson are larger, from 35 to 37 mm. There is also a "Florida" specimen in the collection of the Brooklyn Museum of Arts and Sciences, evidently collected many years ago, as the orange has faded into a much lighter shade. In the Museum of the Academy of Natural Sciences of Philadelphia there is a specimen with a lead colored collar correctly determined as *Pygarctia abdominalis*, but it bears no locality label.

Table for the Determination of the Described Species of Pygarctia.

Forewing with fasciae on costa and inner margin.
Fasciae on costa and inner margin red.
........................(Kansas, Colorado), *spraguei* Grote.
Fasciae on costa and inner margin bright orange.
..................................(Florida) *grossbecki* Davis.
Fasciae on costa and inner margin yellow.
Abdomen red.....................(Texas) *vivida* Grote.
Abdomen light orange.
.... (New Jersey, Alabama) *abdominalis* Grote.
Forewing without fasciae on costa and inner margin, or costa merely edged with white.
Wings wholly white.
......(Southwestern States to South America) *elegans* Stretch.
Wings creamy whitish-gray (New Mexico) *oslari* Rothschild.
Wings pale grayish, inner margin of hindwing red.
..............................(Texas) *neomexicana* Barnes.
Wings gray, a large yellowish-white mark at end of cell of forewing........................ (Mexico) *pterygostigma* Dyar.
Forewing sooty brown, crimson at base, hindwing brownish gray, semihyaline..............(Arizona) *fusca* Rothschild.

The Rarest Hepialid.—Two specimens of *Hepialus auratus* have been captured by a member of the Society at high elevations in the Catskill Mountains. Both were resting on tree trunks in dense woods and both were ♂. It is asserted that not more than six of this species have ever been recorded. Both are now in the collection of Dr. William Barnes.

Aletia argillacea.—The annual northward swarming of the cotton moth was observed last year in October by Mr. Howard L. Clark near Bristol, Rhode Island.

A Wandering Collector's Narrative*

By George Franck, Brooklyn, N. Y.

It was my intention, originally, to prepare a paper on insects injurious to fruit trees, but the return of one of my collectors from the Malayan Archipelago, New Guinea, etc., caused me to change the subject to his talk on collecting in the Tropics of the Malayan Archipelago and Australian Island. So many interesting points are still fresh in my memory that they cannot fail to hold the attention of my hearers.

A space of five years has elapsed since Mr. Kibler was here before, fresh then from a trip to the far upper Amazon regions I gave a description of his experience in Brazil at that time and therefore omit any remarks on his collecting in South America, going right over to the first stop of his last trip, Madagascar. His collecting, as well as his personal experience, in Madagascar was neither cheerful nor financially encouraging. He reached the place in the rainy season and those insects characteristic to the island, which he was anxious to obtain, he did not get at all He went from one end of the Island to the other and such things as *Uranus ripheus*, *Hypolymnas doxithea* and several others, which belong to the fauna of Madagascar, he failed to get. On one of his collecting trips he had a narrow escape from a wild buffalo and barely saved his life by throwing his coat over the head of the animal, which became entangled in the folds of the coat while Kibler escaped by climbing a tree. A severe tornado also came very near ending his adventuresome life. Finally, through sheer disgust, he gave up Madagascar as a very poor investment. Then he sailed for Mauritius and in the beautiful balmy climate of this country he recuperated, doing what little collecting was possible—especially successful with the charming *Precis rhadma*. From there he struck out for the island of Nias, to the south of Ceylon and from that point his actual collecting in the Malayan Archipelago starts.

Nias is noted, especially, as the home of *Hebomoia vossi*—nowhere else in the world is this insect found. This is a beautiful species belonging to the Pieridae and one of the group of insects which have their homes chiefly in islands of the Malayan Archipelago. The group is called *Hebomoia*, represented by the type form *H. glaucippe*, on the mainland. Other species or subspecies are named after the different islands from which they come, such as celebensis, philippensis, javaensis, timoriensis and several others, except the species *roepstorfi* from the Andamon Islands, which has white primaries and yellow secondaries and from Nias, *vossi*, which is entirely yellow. The characteristic cardinal apex mark distinguishes all these beautiful species of the group. All other variations mentioned above have both white primaries and secondaries. The different local variations are slight in most of them. The habit of the insect is peculiar. The underside mimics dead leaves and the fly, seeking rest, always lights on a dead branch, or leaf, and it is therefore difficult to detect them. They are slow flyers and are therefore easily captured. Of course, a great many other species are taken on the island but they are also represented in India or on other islands and show but very slight variations. Some variations like *Euploea niasina* are named after the island. This island of Nias is also the home of the celebrated head hunters. At the slightest provocation they take the heads of their enemies and throw them into a common ditch, after they have removed the jawbone, from which they fashion bracelets and other ornaments. Kibler tried to get some of the very old heads but could not find one single perfect one—each and every one had the jawbone removed to form the barbaric jewelry of some belle or chief of the Nias head hunters. One of the natives asked Mr. Kibler what he would pay him for a live head, *i. e.*, one recently severed from a victim. He assured him that it was very easy to procure one. Kibler threatened him with the Government and he soon seemed to forget his offer. Constant watch is necessary to protect ones' self against their treachery and an almost God-like mastery is necessary to insure one's life. At one time Kibler, through sheer bravado, held off a horde of these head hunters, for eight hours with a cocked rifle, threatening to shoot the first one who made an advance.

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* Read before the Brooklyn Entomological Society.

From Nias he went to Celebes—a tame country compared with Nias. He crossed the island and finally settled in North Celebes at a place called Menado, where he gathered a great deal of entomological material—*Papilio blumei*, *androcles*, *Actias* *isis* and many other beautiful species characteristic to that fauna. Comparatively little collecting was done by himself. The natives soon become adept and such things as *blumei*, *isis*, etc., are raised by them and they are brought to the collector either in the larval, pupal or adult state. After a sojourn of six months he wandered on to Borneo; but his stay in this land was very short as the material received was limited and unsatisfactory. The natives, in the part of the island where he found hinself, were unaccustomed to collecting and were also a very dangerous race of people. He made his escape from the little tribes, after being wounded by a poisoned arrow. He and his companion—a native of Mauritius—got away by a hair's breadth escape in a small boat and made their way to St. Lucia Bay, where they were picked up by a tramp steamer bound for the Philippine Islands. His Borneo trip was an absolute failure and he found himself on the way to the Philippines willy-nilly. This field was also disappointing. From there he went to the Island of Palawan especially for *Ornithoptera trojana* but after he explained the situation to me I understood why *trojana* is so very rare. It is found only in the Island of Palawan and on this is situated the Government prison. Their favorite spot is a waterfall in the enclosure of the prison and a most diligent search in all other directions would not disclose one single specimen of the much wanted insect. The prison grounds were closed to him and the Commandant could not be prevailed upon to allow him to go inside of the grounds. It seems that a certain prominent collector with whom I had a personal interview several years ago, abused the privileges to such an extent that the Commandant thereafter refused the admittance of any person collecting insects.

He went back to Manila and there met a planter from the Kei Islands who offered him a position as overseer on his plantation. The wages being fair and, as he was worn out with travels, he accepted the position and remained in Kei Islands for fifteen months. The natives are a primitive people, easily controlled, but with a great many nasty habits which are most repulsive to the educated European. They are nude but for the hip cloth. At certain times of the year they gather for a dance in which they make a circle of men and women alternating. They place a pot in the center of the circle into which the women expectorate and when enough is gathered in this manner they add alcohol and a certain kind of sugar and the males, dancing and yelling, drink this concoction until they become half mad with intoxication, frothing at the mouth and getting almost entirely without reason. At such times white men must keep out of sight for the natives are most dangerous in that condition. They place their dead on scaffolds leaving them in that manner, and when the process of decomposition sets in the air does not exactly waft attar of roses into one's nostrils. This is, however, the home of *Ornithoptera hekuba*—a variety of *priamus*. These are raised by the natives and must be very common. I just purchased a lot of 500 pairs from Mr. Kibler and some other forms of *Ornithoptera*, like *hypolitus*. These are much rarer than *hekuba* and are found mostly as pupae. It is difficult to distinguish the species until they emerge. Here is also found the tremendous walking stick, *Phasma gigantea*, which is found in the high, reedlike grass and is easily captured. Not many other lepidopterous species occur on this island except those above mentioned. From here he went to Aru Island for *Papilio croesus* and *ulysses*, but *croesus* was scarce and were reported flying at a place which one can reach only with difficulty. *Ulysses* were common enough in Batchan, Papua, etc.

After staying in Kei Islands for over a year, Kibler shaped his affairs so that his next step would be New Guinea. He landed in German New Guinea, Finchhaven, to find the greatest of all Saturnidae—*Attacus hercules*. The information received was that the insect occurred in the mountains and not in the flatlands, so he travelled to a small hamlet called Spartansburg. No white man inhabited this place except one missionary. The missionary himself, is collecting this insect and claims them to be very scarce. He claims that the natives feed on the larvae and altogether they are very hard insects to procure. He collected there for a little time and then left, taking a prahu to Dutch New Guinea, This new territory he found an unexplored country—no whites at all. All he found were natives who were cannibals of the worst kind. However, he faced all the dangers of this region to get his prize,—*Ornithoptera paradisea* and *tithonus* as well as the commoner forms of *O. cronius*. Where he landed there was a small settlement of natives and on landing a stench met his nostrils that was hard to endure. On investigation he found some dead bodies in stages of decomposition on a sort of a raft. He moved his camp and swung his hammock far enough away to escape these very disgusting natives and their more disgusting habits. The natives do not seem to mind this stench. He brought with him a large supply of canned goods and lived as well as conditions would allow. Only once a month a small steamer would land to supply him with provisions. The natives were entirely nude—had never seen a white man and gathered in large hordes to look the phenomenon over. By experiences gathered in other dangerous countries he found out how it was best to get along with these people and although they were cannibals he managed each time to escape with his life and often made fast friends with the natives. Clothes were an unknown quantity and handkerchiefs there were none. Often girls of sixteen to eighteen years of age looked a very disgusting sight due to the lack of handkerchiefs. After long journeys with very small financial results, he at least found something which he was after. Although connected with untold trouble, he succeeded in getting a number of *paradisea*, also a few *tithonus*. It certainly must be a majestic sight to see these butterflies sweeping down from the side of a mountain to the flat land, to feed toward evening. In the reed grass, covering the flat land, grows a plant which stands above the reeds a foot or so. This has a small yellow flower, the desired food of the butterfly which he wanted to capture. He built a platform with the reed grass covering him and when a butterfly came along he swept a net about thirty inches in diameter. It takes a strong man to handle such a net. They also feed in the early morning but it took from four to five hours to reach that place, so there was only the evening left in which he could do his work. One day, going through the forest he came to a tree the bark of which the natives use for rope. Upon closer examination of the bark, he found on loosening it that it contained many species of *Charaxes*, *Limenitis*, *Tenaris*, etc., so numerous that one could hardly insert a pin without impaling one. He never had known where or how to find these species but upon his discovery he had the natives tear away the bark and took many specimens to his delight. All these species were never encountered in open country. He also found that red.

as a color, attracted *Ornithoptera.* He used red cloth with great success.

His luckiest strike, however, was not in the insect line but in the discovery of a most wonderful animal, the great "Landschnabelthier." In short, this animal has a bill like a bird, has hardly any tail, belongs to the warm-blooded animals—the mammals. It lives in the ground like a mole—only coming out of his hole at night. Hind feet like mole feet. The fore feet are like those of an elephant. This most curious animal lays eggs like a bird and does not bring forth living young like a mammal. Laying eggs like a turtle, it carries its young in a bag. It also has a tendency to change the temperature of the blood according to that of the atmosphere. Of the particular species taken by Mr. Kibler not a single specimen had ever been brought to Europe. Kibler finally managed to secure eight specimens. He sold two of them to Tring, two to Berlin, two to the Hungarian Museum at Buda-Pesth, one to Frankfort. The remaining one died and this one he brought with him to America and sold to the American Museum of Natural History. The female at Tring began to lay eggs a few days after arrival, much to Mr. Rothschild's delight and Kibler's pecuniary advantage.

After he had become acquainted with the natives, he made excursions into the neighboring islands—sometimes with great success, other times not so successful. His stay in civilization was short. Only the wilderness has charms for him. A week after arrival here he left for San Francisco to start afresh to the Solomon Islands. I suppose he will wander until some day some of the natives of these dangerous islands make away with him.

Hemiptera.—A specimen of *Ceraleptus americanus* has been taken in the Rockaway Beach washup. It has not hitherto been reported east of California.

Lepidoptera.—A Sesiid, *Albuna pyramidalis*, a mountain species, is recorded from Long Island, bred in Brooklyn.

Lepidoptera.—*Catocala marmorata* has been taken in Brooklyn.

Odonata.—*Somatochlora provocans*, a rare dragon-fly anywhere, is now represented by a single female from Sullivan County, N. Y.

The Rector of Barham and His Times.

By R. P. Dow, Brooklyn, N. Y.

Blessed is the novelist who in drawing a character gives to the world a type which, *mutato nomine*, might be any one of many actual personages. A reader of Anthony Trollope especially, of George Eliot or Jane Austen knows necessarily many English country clergymen of a century or two ago and pictures clearly their whole environment. Trollope's favorite clergyman is born rather above the middle class, attends the University, stands well in his classes, after taking a degree gets a curacy on very small pay, marries, works hard, preaches two sermons every Sunday, visits his parishioners, ministers to the sick and needy, and finds time to carry on some scholarly hobby. If fortunate, he is promoted to a good living and a rectorship. After that there are fewer sermons to preach, fewer parochial visits, more time to pursue one's hobby, more opportunity for an occasional run down to London, more correspondence with the outside world. The life he leads is a healthy one and generally his old age is peaceful and prolonged. He is charitable of opinion and mild of temper, his wildest outburst probably over some tract in ecclesiastical polemics. Precisely such was the Rector of Barham, a village in Suffolk, five miles from the large town of Ipswich, a day's walk from the seashore, and seventy miles from London.

William Kirby was born in 1759, came to Barham on his ordination and worked in the parish seventy years until his death in 1850. During that time he never failed (verbally or mentally) to chastise a dissenter, observe a flower or regard an insect. He was the typical country collector in all orders. He never walked without a bottle of gin in his hip pocket, but not for drinking purposes. A glass or two of ale was refreshment enough for the parson himself. The gin bottle was the repository of the hapless beetles. In Kirby's day there was no denatured alcohol at 2s. a gallon, no cyanide bottles, no steel entomological pins, no patent cork sheets, no Schmitt boxes. Bruised laurel leaves in a bottle gave a slow euthanasia to captured butterflies. There was no fast train to the meeting place of the entomological society in the metropolis. There was the slow coach and the day's journey.

Under these circumstances the sweet-souled Rector worked primarily for the love of working, but indirectly to postpone as far as possible the wave of the River Oblivion which in time overtakes all humanity. He lamented the fall of Adam, who, with the undegenerate mind, named every species in the Garden of Eden. To Kirby's mind no idea of evolution ever came. God had created all species in a single day. A hundred generations of scholars, he thought, could not rediscover more than a fraction of what Adam knew. He refused a professorship of botany at Cambridge and devoted himself entirely to entomology at home.

Yet this man in the obscurity of the country became the greatest authority of his time, and his biography is a history of the half century in English natural science. He read Linné's System of Nature during Linné's prime of life. Seventy years later he corresponded with Leconte in Philadelphia.

Forst.

There was no dearth of English literature at hand. As long ago as 1766 Moses Harris, the copper plate engraver, had published his "Aurelian," a manual of moths and butterflies with 41 colored plates. This work ran through several editions and was translated into French and German. Drew Drury got out his work on exotic insects in 1770, with English and French text and 50 plates engraved by Moses Harris. Forster, the elder, had published his century of new beetle species, a number American, about the same time.

Kirby

The Linnean Society of London was founded in 1788 with Kirby as a corresponding charter member. His first entomological paper, "Three Species of Cassida," was read and published in 1793. It was in 1802 that he published his first book, "The Bees of England," the product of fifteen years daily observation. His fame was immediate. His parsonage became the Mecca of entomologists, his chair at the Linnean Society to be kept vacant in his absence.

At the beginning of the century Thomas Marsham was the leader of British insect collectors and was carrying on his "Entomologica Britannica." John Francillon made a famous collection and had some beetles from Georgia, U. S. A. Edward Donovan was another great collector, of insects, shells and many other things. His first great work, on British Natural History, was in 16 volumes, with 566 little colored plates, published in parts from 1792 to 1813. Drury was the Geo. Franck of his time, the first dealer in insects. He abandoned his trade as a goldsmith and opened a regular place of business, where he handled not only lepidoptera but all insects and entomological supplies. He had virtually a monopoly of the business for about thirty-five years. He printed announcement cards in several languages, which he sent all over the world, offering to buy all exotic insects larger than a honey bee at sixpence each. In 1800 his stock on hand amounted to 11,000 species, but this, of course, includes all orders. England was never richer than in those earlier years of the Napoleonic wars. A choice insect was a prize indeed, and no one knows how many £5 notes Drury pocketed for an equal number of showy butterflies. Donovan paid 12½ guineas for a *Goliathus*, the Cetonian originally described as a *Scarabaeus*. Drury's final auction sale took place in 1805. Donovan wrote the catalogue, which Drury was physically unable to do, his last illness being on him. Things went, for once rather cheaply. The entire proceeds were £614. This catalogue, with all prices and the names of all buyers, is still preserved. Men bragged for a generation afterwards of the bargains they got at that time. When Francillon had to sell his collection it fetched £726. Poor Kirby bought the Georgia beetles. Alex MacLeay bought nearly half the collection. Two MacLeays must not be confused. The "MacL." of the check list is W. S. Alex was a Government official and was secretary of the Linnean Society until he went, in 1825, as Colonial Secretary to New Holland, whence he sent home specimens to Hope and others for the rest of his life.

In 1805 Kirby became acquainted with Wm. Spence, his future literary partner. A year later he began correspondence with

Gyll.

Gyllenhal. It may be remembered that when Linné was at Upsala the University sent out men to gather natural history material from all parts of the world. Kalm went to North America where he investigated the 17-year locust, Thunberg to China. When Thunberg succeeded Linné, his best pupil was Leonard B. Gyllenhal. The younger man served twenty years in the army, becoming major. Thereafter he devoted his life to beetle study. The friend who brought about the introduction described him as "by far the best coleopterist in Sweden." Wm. D. Peck,* Professor of Natural History at Cambridge, Mass., wrote to Kirby in 1808 bewailing the scarcity of books. There was no mention of Thrips, etc., except in Linné's "System of Nature" and Réaumur's work of 1735. Latreille began a lifelong correspondence in 1806, writing from the house of his patron, Olivier. It was Prof. Peck who sent the Stylopid known in the checklist as *Xenos peckii*.

Peck

During 1807 Kirby devoted most of his time to a study of Gravenhorst's work on Staphylinidae. His correspondence with Fabricius was active and on one side slightly acrimonious. Kirby offered many criticisms on Fabricius's views on classification by means of mouth parts, to some of which the latter finally acquiesced. Fabricius naively confesses in one letter a cause of some imperfect work, he had spent so much time, he said, in looking at his beloved beetles that he had slurred badly the homologies in the other orders. Nevertheless Fabricius proposed to visit Barham in company with Latreille. But, although letters were readily smuggled through, there was too much danger in trying to pass the blockading fleets. France and England did not love each other at that time.

In 1808 Kirby wrote to Spence suggesting that as Marsham's health could hardly permit him to go on with the "Entomologica Britannica," they take up some publication more or less periodical. This idea was abandoned in favor of a general treatise. Together they slowly planned the "Introduction to Entomology," settling the details of division of labor almost paragraph by paragraph. Publishers were consulted about the risk of such a costly undertaking. Work was constant. Volume I was put upon the market in 1815. The edition of 750 copies was sold out before the publisher could insert the final items in his cost sheet. Every collector wanted it. By 1822 over 1,500 persons in Great Britain and Ireland were studying entomology or collecting.† A second edition was printed before Vol. 2 was published. The third and fourth volumes appeared in 1826. German translations were published 1823-33. A fifth English edition was required in 1828. A sixth covered only two volumes in 1843. Mr. Kirby was then in his 83rd year and could not continue it. It should be needless to say that the book brought comparative wealth to both authors.

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* One beetle was the only insect Peck ever named.

† For a fine portrait of the local beetle collector of the period consult "Felix Holt, the Radical" by George Eliot.

In 1824 Kirby was in communication with Thomas Say, in Philadelphia and later at New Harmony. All England had a scare over the Hessian fly, and there was no one to identify the beast except Say. In 1826 Kirby received a reply to a letter sent to Prof. Peck at Cambridge. It announced Peck's death and was signed Thaddeus William Harris. Learning that the latter was a son of Rev. Thaddeus Mason Harris, author of a "Natural History of the Bible," a well known work, he began active correspondence. Dr. Harris wrote in 1828 of planning to write a "Faunula Insectorum Bostoniensis." The Fenton collection had about 3,000 local species but there was a lamentable scarcity of books.

Hope

In 1833 the Entomological Society of London was formed, with Rev. Francis Hope,* author of the "Coleopterist's Manual," as its first president. Hope was a member of a famous family and a man of wealth. Leconte compares his collection, for quality, if not also for size, with that of Dejean, and Dejean had nearly 23,000 species of beetles, to say nothing of lepidoptera and other orders. Hope afterwards bought Dejeans's lepidoptera, which with his own collection, library, and a special legacy of £20,000 was left to Oxford University.

Stephens
Clark
Curtis

Kirby hesitated about supporting the new organization, lest his beloved Linnean Society should suffer, but became promptly convinced that both were needed. Leach and MacLeay were enthusiastic over it, as were J. F. Stephens, Rev. Hamlet Clark and John Curtis, of Arctic fame.† Stephens wrote a "British Entomology," a notable work, published in parts, with colored plates, from 1827 to 1845. He bought Marsham's collection, which, with his own, went to the British Museum. Curtis published his own work on British Entomology in 193 numbers, 16 volumes,

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* Hope figures in the checklist with 2 species and 5 genera.

† In the checklist Stephens is credited with 9 species and 39 genera and Curtis with 7 genera.

1823 to 1840, with 770 colored plates. He published, in 1829, a catalogue, printed on one side, for use as labels. He described the insects collected on the second polar voyage of Commander Ross, and later wrote up the coleoptera collected on the expedition of Capt. King to the Straights of Magellan. Other charter members were J. C. Dale, the foremost lepidopterist of the day, Edward Newman, whose activity has left 62 species and 23 genera in the checklist, J. O. Westwood, of Cambridge, who ruled British natural science ten years later, Shuckard, the translator of Burmeister's "Handbook of Entomology," Henry Denny, author in 1825 of a monograph on the Pselaphidae and Scydmaenidae of England, a work with 14 colored plates, George A. Gray, describer of four American species, senior assistant in zoology in the British Museum, A. H. Haliday, of Dublin, who described many new local species and was the best entomological authority in Ireland, John G. Children, who wrote in 1836 on the insects and arachnida collected on Back's voyage in search of the North Pole, and Prof. Babbington, whose chair of botany in Cambridge Kirby had refused, and who wrote on the Dyticidae taken by Chas. Darwin on the voyage of H. M. S. *Beagle* to South America and Australia, 1826 to 1836.

Dale
Newm.
Westw.
Gray

Moreover, the supply of entomological periodicals was just as good as it is now. There were in active circulation the *Zoological Journal*, *Isis*, and the *Magazine of Natural History*, as well as the "Annals of the Linnean Society." The transactions of this famous society are filled with discussions of coleopterous classification, with Kirby, MacLeay and Westwood the principal disputants.

Kirby's last work is the one connecting him vitally with the history of North American coleoptera. Dr. John Richardson had sailed, as naturalist, with Sir John Franklin. After working for nearly fifteen years on the insects caught on this expedition, Kirby published his report in 1837, the "Fauna Boreali-Americana." The insects themselves were presented to the British Museum in the joint names, Richardson and Kirby. Thenceforth the Rector of Barham lived for thirteen years in honored retirement. His own collection was left to the Linnean Society of London, his first love. His contribution to the coleopterous families, as now constituted, are the Cleridae, Trogositidae and Cryptophagidae. The checklist contains 95 of his species and 24 genera, excluding all synonyms.

Of the groups separated by Latreille those which still stand as families the list is Gyrindae, Nitidulidae, Lucanidae, Rhipiceridae, Tenebrionidae, Cistelidae, Oedemeridae, Anthicidae, Pyrochroidae, Chrysomelidae, Coccinellidae and Curculionidae. The last was held to include almost all rhyncophorous beetles, until in 1876 Leconte and Horn made the divisions as they are generally regarded to-day.

Leach

During this period the beetle collections of the British Museum became richly stocked under the curatorship of Wm. Elford Leach. This enthusiastic student lived from 1790 to 1836, almost exactly contemporaneous with Say. His death occurred in Italy, from colera. Of American material Leach determined only three new species, but he differentiated 24 new genera applicable to America. In the major classification the families to bear his name are: Cicindelidae, Carabidae, Hydrophilidae, Silphidae, Scydmaenidae, Staphylinidae, Histeridae, Mycetophagidae, Byrrhidae, Buprestidae, Elateridae, Lampyridae, Lymexylidae, Ptinidae, Melandryidae, Mordellidae, Endomychidae and Cerambycidae. This last, of course, is little more than a nominal change from the Longicornia of Latreille. Similarly the Scarabaeidae, credited to Erichson, is no great change from the Lamellicornia of Latreille.

Wm. Sharp MacLeay published entomological papers from 1819 to 1843. He was a well-to-do amateur in the Government service, and a good controversialist, but his scheme of classification lost weight in comparison with the broader work of Erichson. It is said anent his mild manners that a contradiction sent him into tears and a rebuff put him into a sick bed. A few years after the Society was formed, he went as a Government official to Van Diemen's Land, where he spent the rest of his life.

MacLeay has 3 American species and 9 genera. His families are the Dyticidae,* Pselaphidae, Scaphidiidae, Parnidae, and Heteroceridae.

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* The genus *Dytiscus* of Linné was so spelled by a printer's error which survived proof reading. The word is the Greek *Dyticus*, a diver. The proper spelling has been adopted by Encycl. Brit., 11th ed.

Butterflies and other Insects Noticed at Barnegat Pier

By Herman H. Brehme, Newark, N. J.

Barnegat Pier is a station on the Pennsylvania R. R. opposite Seaside Park, Ocean County, N. J., where fishing and pleasure boats harbor and the two boarding houses and several bungalows are all that comprises this summer resort. The writer had occasion to spend two or three days out of each week from August 7th to September 30th, 1911, in this quiet little place. Most of the time had to be spent on the saltmarsh, laying out work, as at the time the meadow was being drained for the extermination of mosquitoes, but a little time each day was spent either in collecting lepidoptera or taking notes of the different species seen.

The most common species of butterflies was *Catopsilia eubule*. The total number which were seen in the period of two months was well over the five hundred mark. There is, of course, no doubt that the same specimens in some cases were seen more than once and probably several times, but as this insect seemed to travel one way most of the time from north to south it is safe to say that not many were seen more than once.

There is a long trestle across Barnegat Bay at this point and in the afternoon after tramping the meadows in the morning I would rest up on the porch of the boarding house which is nearly in a parallel line with the trestle. The first afternoon I noticed that many insects would come across from the ocean side and generally on the south side of the trestle. Observations were made further down the bay and then north of the trestle, but nothing of that sort was noticed. To find out more about these flights, which seemed to be migratory, several whole days were spent on the porch, all sorts of days were selected, but it is peculiar that while odd specimens would come across in the morning, the real flight would not begin until two o'clock in the afternoon. As a rule, the wind generally changes along the coast about that time and strikes in from the southeast. This happens nine days out of ten and may have had a tendency to drive the insects to the mainland.

The largest number of any group were noticed on August 29th, when from two until five o'clock 659 dragonflies were counted, all coming across the bay. No tally was kept on any other insects on that day, but the dragonflies seemed to be the most abundant.

Unfortunately the insects, when they come across the bay, fly too high to be captured, but they go down low again when they reach the meadows back of the houses. *Graptas* of all kinds would come across in abundance and hundreds of *G. j-album* could be seen. This species undoubtedly breeds along the coast in great numbers, as they are found to be quite common every year.

Junonia coenia was found in great numbers all through the meadows. Several nice females of *Argynnis idalia* were taken. *A. myrina* were plentiful, but in bad condition. *A. cybele* was not common. *Papilio turnus*, *troilus* and *asterias* were all common and most of them came across the bay. *Euptoieta claudia* was quite common, *Phyciodes tharos* common, *Grapta interrogationis* common, *G. comma* plentiful, *G. progne* not common, *Vanessa antiopa* common, *Pyrameis atalanta* very common, *Limenitis ursula* not common, *L. archippus* very common, *Neonympha canthus* not common and very much dilapidated, *N. eurytris* the same as *canthus*, *Satyrus alope* rather common, the variety *maritima* also common, *Terias nicippe* not common, *T. lisa* very abundant, *Danais plexippus* very common. Many Hesperidae were noticed, but these were so badly rubbed and dilapidated that it was almost useless to attempt to identify them and nothing was done with that group.

While only a list of the butterflies was made it was safe to say that they were not by any means the predominating insects. Apparently the dragonflies held first honor in that line, but the other orders of insects were all well represented.

Any entomologist desiring to collect a lot of material of all orders can undoubtedly do so in that section. The accommodations at Mr. Wesley Falkenburg's boarding house are excellent and no collector will regret the spending of a few days in that territory.

Rare Coleoptera.—*Pomphopœa sayi*, a Southern Meloid, taken at Rockaway Beach, and *Zabrotes subnitens*, taken on *Prunus maritima*, are recent additions to the list of Long Island insects.

Rare or New Coleoptera from California.

In a consignment of beetles from E. P. Van Duzee, collected near San Diego, were six *Atimia dorsalis* Lec. They were beaten from cypress on the "Mesa," about 200 feet altitude. Freshly emerged and pinned promptly, the long pubescence of the elytra, which constitutes the maculation, makes them strikingly different from the usual worn specimens. The species shows great variableness in size and maculation.

In a lot of beetles received from the slope of Mt. Shasta there was a Leptura not readily referable to any known species. Two more were found in a Sonoma County lot and still another came to light in the collection of L. H. Joutel, from Verdi, Nev. All were males. Head and thorax were black; elytra straw color, except for a black cross running two-thirds of the length and all of the width of the elytra. The specimens were shown to Col. Casey and Chas. Schaeffer, who called them after deliberation, *L. laetifica* Lec. Examination of every structure shows complete correspondence with the typical black *laetifica*. Not only are there intermediates but Mr. Schaeffer has one with the elytra wholly straw colored, which was for a long time confused with *L. circumdata*. Apparently the males of this common Pacific species vary as much in color and pattern as do the *L. vagans* of the East, with all gradations from straw to black.

From Sonoma County and Mt. Shasta came also six specimens of a *Corymbites* which do not accord with any seen so far. I retain three and have given a specimen to Messrs. Leng, Schaeffer and Joutel. For this species I propose the name, *joutelii* n. sp. Some are unicolorous, others with thorax a shade or two darker than the elytra. Length about 15 mm. Slightly shorter than *pyrrhos* in the thorax, almost exactly equal in the elytra. The thorax is not quadrate, like *pyrrhos*, and is a third shorter in comparison to width. Apical angles of thorax like *pyrrhos*, but the whole thorax tapers with a pronounced curve on the forward third. There are a pair of large, distinct depressions on the thorax just forward of the posterior margin, and long shallow depressions near the side margins. Pubescence on disk of thorax not uniformly distributed—less abundant on middle than on sides—longer, grayer, less golden than *pyrrhos*. Scutellum less circular, narrower at apex. Antennae with joints decidedly broader and blackish Elytra have a small sinuate truncation with a minute spine at the sutural tip.

The synopses made by Leconte and Candèze are much out of date, and no genus of Coleoptera stands more in need of revision. At least a dozen new species are in local collections and one of our leading coleopterists has promised to take the matter up. This done, the species now before us will be proven or will fall into the synonymy with no harm done to anyone.

Lepidoptera.—In 1911 *Catocala consors* was bred in number from L. I. larve, as were *Limenitis proserpina*, both sexes, and the form *albofasciata* Newcomb, on wild cherry. Evidence before the Society is strongly that *albofasciata* and *ursula* may come from the same mother.

Proceedings of The Brooklyn Entomological Society.

The regular meeting of the Brooklyn Entomological Society was held at 55 Stuyvesant Avenue, March 13, with 19 members present.

Mr. Franck exhibited a melanotic *Smerinthus* described in the April number of the Bulletin. Mr. Davis showed a new species of Odonata, since described in the Journal of the New York Entomological Society, *Enallagma recurvatum*, the male type from Wyandanch, L. I., female from Lakehurst, N. J., and an interesting capture, *Somatochlora tenebrosa* from Hauppogue, L. I.

Mr. Nicolay showed a local collection of beetles with many rarities. Among them were *Pterostichus scrutator*, taken plentifully under a log. This is a record for Long Island, and is not in the New Jersey list. At Bellport all the locally known species of *Necrophorus* were taken, except *vespilloides*. *N. sayi* was common. *Tmesiphorus costalis* was taken plentifully in a termite's nest. *Prionus pocularis* and *Romaleum atomarium*, the latter under fresh oak chips at Tangier, L. I., were captured. From the Catskills during the dry season *Cychrus viduus*,were clustered under loose bark at the base of a tree. Other Catskill species were *Lebia furcata* and *Buprestis fusiformis* Casey.

Among the hibernating beetles were *Cychrus lecontei*, Van Cortlandt Park, Dec., *Amara fulvipes*, *Badister pulchellus*, and *Lebia pleuritica*.

The regular meeting of the Brooklyn Entomological Society was held at 55 Stuyvesant Ave., Brooklyn, April 10, with fourteeen members present.

Among visitors was J. A. Grossbeck, of the American Museum of Natural History.

Messrs. Doll and Haug reported that on a trip, the Sunday previous to the meeting, to Central Park, L. I., as many as 150 *Jodia rufago* were encountered amid 40 or more *Copipanola cubilis.* Messrs. Davis and Engelhardt encountered many on the same date on a walk from Central Park to Massapequa, through a most promising collecting country. The way was readily found without path or compass by keeping in sight the red maples in flower by the edges of the stream in the midst of the long swamp.

Mr. Nicolay widened the date records for *Cychrus lecontei* by showing four specimens from the Palisades, March 29. He recently gathered great numbers of *Elleschus scanicus* Payk., an introduced species, by sweeping low grass in a moist situation. The specimens were pale, having recently emerged. This is a record for Long Island.

Mr. Franck's paper appears elsewhere in this number.

Mr. Davis described a visit September 4-6, last year to Southold, L. I., near which regions collecting promised well. Lake Hashamomuck, so-called, is in reality a large tidewater inlet, although belied by the fine vegetation along the shore. In another direction was Great Pond. There is one path to an ice house by the pond. Elsewhere the woods are thick. Nearby is the most easterly patch of the scrub pines on the north shore. Some tulip trees were encountered but they were stunted. One large white pine and saplings were found. Sweet gum was absent, but there were American lindens.

Cicada engelhardtii Davis, normally from Virginia to Alabama, was encountered here, also the southern *Conocephalus lyristes.* The search for Orthoptera was decidedly successful.

Mr. Shoemaker exhibited a collection of Long Island beetles. *Tetragonoderus fasciatus*, taken sifting at Aqueduct March 22, has hitherto only been reported locally from near Camden and southern New Jersey. *Cymindis borealis* was taken and *Panagaeus crucigerus*, the latter May 8 under an old bit of leather. A specimen of *Soronia ulkei*, an inhabitant of ant's nests, was taken alive on the tide line, Rockaway Beach. *Phymatodes dimidiatus* is a good local record. Last summer in August he encountered a poplar beneath which the earth from a trench had been thrown so high that, walking on it, he was level with the branches. From this position he took 58 *Saperda calcarata*, mostly females, ovipositing on the trunk and large branches. *Saperda discoidea* were numerous in hickory at Aqueduct.

R. P. Dow, *Secretary.*

IDENTIFICATIONS—The Secretary sets apart the hour from 12 to 1 Mondays, Tuesdays, Thursdays and Fridays, at his office, 15 Broad St., Manhattan, room 9, Ninth floor, to receive visitors interested in Entomology, and aid them, if possible, to identify, especially Coleoptera and Lepidoptera. Beginners will be made especially welcome.

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Corixidae of Georgia.

By J. F. Abbott, Washington University, St. Louis, Mo.

During the summers of 1909 to 1912 Prof. J. Chester Bradley, in his capacity of Special Assistant to the State Entomologist of Georgia made important collections of insects, including many aquatic Hemiptera. This group he turned over to Prof. J. F. Abbott, of Washington University, who has worked up the Corixidae. The editors trust that this is the beginning of a series of definitive papers on the neglected families of this order. A practical key for the determination of the species has not hitherto been accomplished.—*Editors.*

Explanation of Plate.

All the figures with the exception of 1c, 1d, and 8 were drawn with a camera lucida.

Fig. 1 Palmacorixa buenoi, male pala x95.
" 1a " " female pala x95.
" 1b " " outline of tip of hemielytron x25.
" 1c " gillettei, ideal section of pala (diagrammatic).
" 1d " buenoi, " " " " "
" 1e " " distal peg x900.
" 1f " " proximal peg x900.
" 2 Arctocorisa gordita, female pala x95.
" 2a " " male pala x95.
" 3 Corixa minima, male pala x95.
" 4 " macroceps, male pala x95.
" 5 Corixa verticalis, male pala x95.
" 6 Arctocorisa compressa, male pala x95.
" 7 " bradleyi, male pala x95.
" 8 " compressa, free hand sketch of male pala from the upper edge.
" 9 Corixa sellaris, female pala x95.

1. *Arctocorisa interrupta* (Say).

Marietta, March: Okefenokee Swamp, June. The southernmost record for this species, which seems to range over the whole United States east of the 100th Meridian.

2. *Arctocorisa nitida* (Fieber).

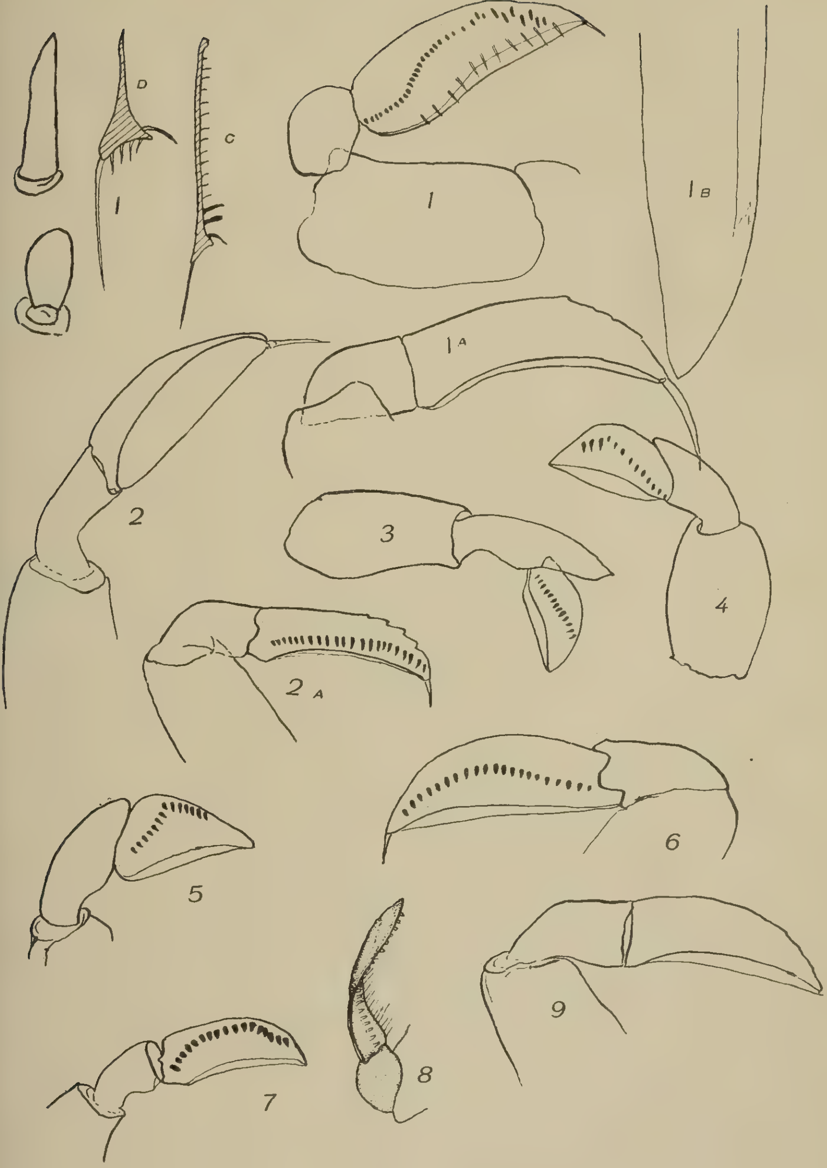
Spring Creek and Okefenokee Swamp, June. This species appears to range over the Southern Atlantic seaboard from the Gulf to Maryland.

3. *Arctocorisa nitida* var. *minor* (Abbott) n. var.

Marietta, Athens and Gainesville. This form is very close to *nitida*, resembling that species in strigil, palæ, and general facies. It is however, much smaller (7¼—7½ mm., -males-, and 8 mm., -females-, in length) and differs furthermore in the presence of a pale yellow or clear spot on the outer margin of the tegmina just before the suture that divides the corium from the membrane. This mark, is rendered more prominent by the presence of a dark brown spot which borders it on the posterior margin. The effect is somewhat reminiscent of the variety *bimaculata* Guerin, of *A. abdominalis* (Say).

4. *Arctocorisa hydatotrephes* (Kirkaldy).

Many specimens from Spring Creek, Decatur Co., June. This striking species has not been reported hitherto from elsewhere than the type locality, Raleigh, N. C. The species is readily distinguished by the coalescence of the tegminal lineations into solid black. In the Georgia specimens, this extends, in most of the individuals, to the pronotum, the typical five lines becoming three by confluence. It is rather remarkable that although abundant collections of aquatic Rhynchota have been made throughout the state for several seasons this species appears to be confined to one locality. For this reason the notes of the collector, Dr. Bradley, are of interest. He writes that the region is "more or less of a limestone one and the creek, about 60 feet wide, of perfectly clear water with sandy, or in places rocky, or weed-covered bottoms, is lined with cypress and live oak and scrub. But at intervals along the creek are cypress bays, where the growth of cypress and deciduous trees and the consequent shade is very dense, where the ground is frequently overflowed with water, leaving on its retreat such pools as the *hydatotrephes* occur in."


D
C
1B
1A
2A

5. *Arctocorisa compressa* (Abbott).

Numerous specimens from the Okefenokee Swamp. June. Also from Wrens, Gainesville, Cave Springs and Blackshear. May, June.

6. *Arctocorisa sigmoidea* (Abbott).

Numerous specimens from Okefenokee Swamp, June. Also from Blackshear, Gainesville and Marietta. Apparently the most abundant species in southern Georgia. The males are very easily identified by the peculiar palæ, but the females resemble those of *A. compressa* so closely that in individual cases it is often very difficult to discriminate them. *Sigmoidea* is somewhat narrower and smaller than *compressa*, more shiny and less rastrate. *Compressa* is much less abundantly represented in the present collections.

7. *Arctocorisa bradleyi* (Abbott).

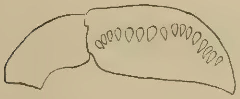
Okefenokee Swamp, June. Blackshear, May; Cave Springs, August; Offerman, April.

8. *Arctocorisa scabra* (Abbott).

Okefenokee Swamp, June; Marietta, March.

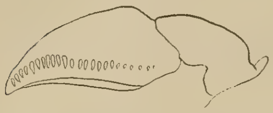
9. *Arctocorisa signata* (Fieber).

Gainesville, April. Several specimens that are without question Fieber's species, although differing in minor particulars. The male fovea is rather narrowed between the eyes. The strigil is dextral, oblong, twice as wide as long (width 0.1 mm.) with 4 striæ. The palæ in the male are held in a peculiar fashion, bent down until they almost touch the femur. Whether this is a constant character or not is impossible to say. The male palæ are thin, strongly wraped inward, short cultrate and about ¼ longer than the somewhat narrower tibia. The pegs are stout, 13–14 in number and follow the upper margin for the distal half of the row, the first half-dozen pegs being somewhat below the upper margin.



10. *Arctocorisa pectenata* (Abbott), new species.

Head rounded, dull yellow. Interocular width a little less than the length of the head, and not quite three times the width of the head. Fovea shallow, long and rather narrow. Pronotum



subcordate, rastrate, with seven parallel straight lines. Tegmina olivaceous; lineations of clavus entire, those of corium somewhat coalescent, forming a longitudinal vitta on the inner angle; those of membrane confused, coalescent into a central fleck and a darker spot on the outer border. Thoracic pleura pale, abdomen dark. Strigil dextral, minute (diameter, .05 mm.), with 3 striæ. Palæ somewhat lanceolate, strongly compressed and deeply excavate on the outer surface. Pegs 24, in an irregular row along the lower margin of the pala, the proximal seven, less than half the length of the rest; the flattened face of the pala above the pegs, with long cilia. Posterior tarsi brown.

Holotype, a male from Marietta, March 5.

Female: coloration as in the male, rather more chestnut, the tegminal lineations somewhat more confused, those of the membrane partly effaced. Face rather flattened. Palæ cultrate, about 3 times as long as high. Pale sordid below.

Allotype: a female from Marietta, March 5.

11. *Corixa gordita* (Abbott), new species.

A short, plump species with a short broad head. Dark brown or chocolate markings on a tawny yellow background. The markings are broad and heavy with a tendency to coalesce.

Holotype. Male. Head-length, $2\frac{2}{5}$ in width; interocular space $\frac{7}{10}$ the head length. Head brownish-yellow in color, the posterior margin infuscated. Fovea very shallow, ovate, reaching level of eye, somewhat elevated in the center like a boss. Pronotum lenticular, rounded posteriorly, a little more than twice as wide as long with 7 transverse dark brown stripes. These are parallel, the posterior ones slightly curved and little if any interrupted. There is a small medial tubercle near the anterior edge (absent in some specimens). Surface of pronotum and clavus rastrate. Claval lines entire, somewhat oblique with a tendency to coalesce into a darker area along the inner edge. Corial lineations very dark, irregular, confused and coalescent, running together into a large irregular blotch or vitta about the middle or toward the inner angle. Embolium sordid, infuscated at either end. Markings of membrane irregular, vermiculate, a conspicuous dark spot on the lower outer edge. Under surface feather dusky.

Legs yellow. Posterior tarsi brown. Palæ elongate cultrate, slightly more than 3 times as long as wide at base, pegs in an almost straight line, nearer lower margin than upper one, 22 in number. Tibia a little less than ½ the length of the pala, about the same width. Metaxyphus short, triangular. Strigil sinistral, minute, oblong-ovate, 3 striæ. Length 4 mm.; pronotal width 1½ mm.

Cave Springs, August.

Allotype: female. Like the male in coloration. Head-length 3¼ in width; interocular width a little less than head length. Palæ cultrate, about ⅓ as high as long and a little less than twice as long as the tibia, to which it is broadly joined. Length 4½ mm. Cave Springs, August.

Others in the collection (paratypes) from Blackshear and Marietta, March.

12. *Corixa sellaris* (Abbott), new species.

Head somewhat rounded at the angles; yellowish white, the vertex infuscated. Head length equal to the interorbital breadth; 3 times in the width; posterior margin impressed. Front flattened, with rather sparse white bristles. Pronotum rastrate, long and triangular, or almost cordate, with an indistinct carina anteriorly. Outer marginal areas flattened. 12 dark brown lines; these are parallel, not curved, and but little interrupted or broken. Tegminal markings vermiculate and anastomosing; with the exception of the few at the base of the clavus they form a continuous interlocking pattern over clavus, corium, and membrane, with very little tendency toward cross-barring or longitudinal seriation. Embolium infuscated. Clavus minutely rastrate. Tegmina, especially clavus, with sparse short erect white hairs, partially disposed in rows, especially along the sutures. Metaxyphus short, triangular. Under surface and legs yellowish ivory. Claws of intermediate tarsi with a brown band across the middle. Palæ compressed and broadly joined to the tibia, arrowhead-shaped from the outer aspect, short cultrate from the inner aspect, a curving row of bristles on the inner face that recalls the usual distribution of pegs in the male. Height of pala, ⅖ its length; tibia ⅗ the pala in length. Intermediate tarsi ⅔ the tibia and a little shorter than the claws.

Holotype: a female from Brunswick, May 3. Length 5 mm.

width 1¾ mm. Paratypes from Thalman and St. Simon's Island, April.

13. *Corixa macroceps* (Kirkaldy).

Two males and six females from Oglethorp; July. The discovery of the male of this species is of much interest since it removes it definitely from the genus *Arctocorisa* where it was (rather arbitrarily) placed by Kirkaldy. The strigil is *sinistral*, ovate, transverse, with about 5 striæ. The male palæ are short cultrate, about twice as long as high, with 13 to 14 pegs, the last 3 or 4 about twice as long as the others. The line begins at the lower articulation and ascends to the upper margin, the last 4 or 5 pegs following that margin. Tibia about ⅔ the length of the palæ (measuring between articulations), strongly produced dorsally to cover ⅖ of the pala, much resembling *C. verticalis* (Fieber), in that respect. Femur oblong-ovate, both edges convex, about 1½ times as long as wide.

14. *Corixa minima* (Abbott), new species.

Superficially much like *macroceps* Kirk. from which it differs, however, in the following particulars: The lineations, although very confused and inosculate are not interrupted serially to form longitudinal lineations as in *macroceps*; the pronotum is much longer with more numerous lineoles; the palar pegs are differently arranged and the strigil is smaller, with fewer striæ. The first femur in the male also differs in shape.

Male: head large, prominent, posterior angles prominent, silvery gray in color, vertex with a rather prominent keel which entends forward to the fovea; posterior margin infuscated. Interocular space 3⅗ in width of head. Fovea oblong, occupying practically all the face, its surface with long, delicate depressed hairs. Pronotum rounded posteriorly, narrower than the head, about twice as wide as long, with 5 or 6 broad black transverse stripes, broken and confused. Surface rastrate. Lineations of clavus broad, inosculate, confused; those of corium vermiculate, broad, united along the margin but not broken into seriations; those of the membrane effaced. Embolium dusky or sordid. Palæ short cultrate, with 12 pegs which proceed from the lower articulation almost in a straight line to the anterior margin, *i. e.*, not following the curve of the upper margin. Distal pegs not longer than the rest. Tibia produced over the pala for half its length.

Femur narrowed distally, its distal width about ⅔ its basal width, the outer edge convex, the inner somewhat concave, the stridular area confined to the proximal half of its surface. Length of tibia between articulations, ⅔ of that of pala. Posterior tarsi dusky. Legs and under-surface pale. Strigil sinistral, minute, ovate, transverse, with 3 striæ. Length 3¼ mm., width 1 mm.

Holotype: a male from Thalman, April. Paratype from Offerman.

Female: paler than the male, interocular width about the same. Pronotal lineations 5, straight and unbroken. Claval lineations slightly effaced on the inner angle. Body pale beneath. Palæ cultrate about 5 times as long as high. First tibia ⅔ as long as the pala.

Allotype: from Thalman, April 28.

5. *Corixa verticalis* (Fieber).

Two males, three females from Athens, Thalman and Darien; April. The fovea conspicuously surpasses the eye in the males in the collection, but in the absence of other material this seems hardly warrant for a specific distinction. The two kinds of tegminal hairs which Fieber describes for *verticalis*, *pigmæa*, and *burmeisteri*, and which Kirkaldy thought sufficient for subgeneric distinction (*Trichocorixa*) is not a constant character. In the Georgia specimens it is present in the females and absent in the males. Palar pegs 13–14, in a strongly arched row, the distal 3 to 6, longer and sharper than the rest. Strigil sinistral, curved, transverse, long and ribbon-like, about 25–30 striæ.

16. *Palmacorixa buenoi* (Abbott).

One female from Oglethorpe, July. This species ranges along the length of the Atlantic seaboard from the Gulf to New England.

Artificial Key to the Corixidae of Georgia

No one is more painfully aware of the deficiences of these tables than the author. The females are particularly difficult to identify by a single character and large series are necessary to properly appreciate the specific differences. It is hoped, however, that the synopsis, combined with the descriptions, will enable anyone to identify his species at least so far as the males are concerned. It should not be concluded that because a specimen does not fit into the key, it is necessarily new. *Arctocorisa alternata* (Say) has been inserted since it is very likely to be found in the region.

MALES

① Strigil and asymmetry dextral ②.

① Strigil and asymmetry sinistral ⑪.

② 7 mm. or more in length. Palæ ligulate ③.

② 6 mm. or less in length ④.

③ Length 10–10½ mm., lineations 9–10. Palar pegs 26–30.
A. interrupta (Say).

③ Length 9–9½ mm. Lineations 8–9 pegs 21–24.
A. nitida (Fieber).

③ Length 7¼–7½ mm.; a clear spot on the outer lower margin of corium.
A. nitida var. *minor* Abbott.

④ Tegminal lineations coalescent into solid black. Corium bordered with yellow. Pegs 18 or more, parallel to dorsal margin.
A. hydatotrephes Kirkaldy.

④ Tegminal lineations evident ⑤.

⑤ Metathoracic wings aborted. Head large with prominent angles. Surface dull and rough.
P. buenoi Abbott.

⑤ Metathoracic wings present ⑥.

⑥ Palar pegs 20 or more ⑦.

⑥ Palar pegs 17 or less ⑨.

⑦ Claval lineations entire (or slightly forked), tegmina strongly rastrate ⑧.

⑦ Claval lineations interrupted. Pegs 20–21 in an evenly curving row, midway the upper and lower margins.
A. compressa Abbott.

⑧ Length 6 mm. Pegs 38–40.
A. alternata (Say).

⑧ Length less than 5 mm. Pegs 25–26, following the upper margin of the pala. Claval lines forked.
A. scabra Abbott.

⑧ Length less than 5 mm. Pegs 24, along the lower margin of the pala.
A. pectenata Abbott.

⑨ Length 3½ mm. or less. Pegs 17–18, Pronotal lines 5.
A. bradleyi Abbott.

⑨ Length 4½ mm. or more ⑩.

⑩ Pegs 13 in a regular row. Pala less than twice as long as high. Lineations conspicuously longitudinally seriate.

A. signata (Fieber).

⑩ Pegs 13–14 in an irregular row, pala with tip produced in a nose-like projection. Lineations obscurely seriate.

A. sigmoidea Abbott.

⑪ First tibia produced over the upper margin of the pala ⑫.

⑪ First tibia not so produced ⑭.

⑫ Strigil transverse, 25–30 striæ. Palar pegs 13–14 in a sharply angulated row. Pronotal lineations 9–10. Length 5 mm.

C. verticalis (Fieber).

⑫ Strigil minute, 3–5 striæ; palar pegs 12–14 ⑬.

⑬ Pegs in an angulated row, the distal 3–4 lengthened; pronotal lineations 3, corial lineations tri-seriate.

C. macroceps Kirkaldy.

⑬ Pegs in a straight row; pronotal lineations 5–6, corial lineations not tri-seriate.

C. minima Abbott.

⑭ Pegs 22, pala 4 times as long as broad; pronotal lineations, 7.

C. gordita Abbott.

⑭ Pronotal lineations 12.

C. sellaris Abbott.

FEMALES

① 7 mm. or more in length ②.

① 6 mm. or less in length ③.

② Length 10½–11 mm. pronotal lineations 9–10, the intermediate ones broken and confused. Pala 4 times as long as wide.

A. interrupta (Say).

② Length 9–9½ mm. Lineations 8–9, less broken and confused. Pala 3 times as long as wide. Darker.

A. nitida (Fieber).

② Length 8 mm. or less. A clear spot on outer lower margin of corium.
A. nitida var. *minor* Abbott.

③ Tegminal lineations confluent into solid black, corium bordered with yellow.
A. hydatotrephes Kirkaldy.

③ Tegminal lineations evident ④.

④ Lines of clavus entire, but little forked or interrupted (but see *gordita* below). Pronotal lines 6–7 ⑤.

④ Claval lineations like those of corium, broken and more or less confused ⑦.

⑤ Length 6 mm. Tawny, rough surface. Claval lineations broad and entire, in sharp contrast to those of corium.
A. alternata (Say).

⑤ Length 5 mm. or less ⑥.

⑥ Corial lineations interrupted and confluent in two longitudinal seriations.
A. scabra Abbott.

⑥ Corial lineations like those of clavus, not longitudinally seriate (a single vitta toward the center); palæ short, 3 times as long as high.
A. pectenata Abbott.

⑦ Head conspicuously wider and longer than the flattened pronotum and strongly produced at the angles ⑧.

⑦ Pronotum convex and longer than the head (if head is as long as the pronotum then the total length is 3½ mm. or less, see *bradleyi*) ⑩.

⑧ Metathoracic wings normal ⑨.

⑧ Metathoracic wings aborted or rudimentary. Palæ broadly joined to tibia, 3 times as long as wide. Coloration variable, lineations much confused.
P. buenoi Abbott.

⑨ Pronotal lineations 3. Corial lineations tri-seriate.
C. macroceps (Kirkaldy).

⑨ Pronotal lineations 5. Cordial lineations not tri-seriate.
C. minima Abbott.

⑩ Pronotal lines more than 9 ⑪.

⑩ Pronotal lines 8 or less ⑫.

⑪ Lineations of pronotum 9–10; tegmina pale, shiny.
C. verticalis (Fieber).

⑪ Lineations of pronotum 12; Tegmina dark, dull.
C. sellaris Abbott.

⑫ Total length 4½ mm. or more ⑬.

⑫ Total length 3½ mm. or less. Pronotal lines 5.
A. bradleyi Abbott.

⑬ Lineations of corium obscurely longitudinally seriate or not at all. Those of clavus not at all ⑭.

⑬ Lineations of both clavus and corium conspicuously longitudinally seriate. Length 5–6 mm.
A. signata (Fieber).

⑭ Lineations of corium obscurely longitudinally seriate ⑮.

⑭ Lineations of corium dense and not seriate, those of clavus entire anteriorly, merging into a dark blotch centrally.
A. gordita Abbott.

⑮ Stout and broad (width 2 mm., length 5 mm.). Surface dull.
A. compressa Abbott.

⑮ Narrower (width 1½ mm. length 4½ mm.). Shiny above.
A. sigmoidea Abbott.

Description of Localities

By J. Chester Bradley, Cornell University, Ithaca, N. Y.

Marietta, Cobb Co., is on the Piedmont Plateau, about 15 miles from Atlanta. I collected about 2 miles east of the town in and around the mill dam and some smaller pools and streams. The woodland above this dam, along the stream on which it is built, affords better collecting than the ordinary woodlands of the Piedmont region.

Atlanta is also on the Piedmont Plateau, altitude of about 1,000 feet. I collected at various points within a radius of 6 or 8 miles of the city, especially Constitution Lakes, which are a series of several ponds south of the City, some small pools near the Chattahoochee River, and along Peachtree Creek and near Bucklead. A stream two miles north of the latter, bearing a small dam, was especially productive.

Dalton, Whitfield Co., is only a few miles from Chattanooga. It is surrounded by low ridges of the Appalachian system. Collecting was chiefly done around a little trout pond.

Gainesville, Hall County, is another locality on the Piedmont Plateau, altitude about 1,000 feet. Collecting chiefly around the City reservoir about a mile west of town.

Wrens is in Jefferson Co. a few miles south of Augusta, in flat country near the Fall line. Collecting here was confined to a small standing pool near the railroad track, while waiting for a relief train to appear to carry us away from the scene of the wreck of the train on which we had been traveling.

Blackshear, Pierce Co., is in the flat and sandy, poorly drained wire grass and long leaf pine country. It is a fine locality, collecting being done chiefly along a branch of the Satilla River and in a weed filled pond.

Thalman, in Glynn Co., is very similar to Blackshear. Collecting was done along the ditches near the railroad track, full of vegetable and animal life.

St. Simon's Island is in Glynn Co., about 14 miles from Brunswick. It does not rise more than 4 or 5 feet above the sea, is covered with live oak, pine, palmetto, salt marshes and cultivated fields. Several fresh water ponds afford at a favorable season aquatic collecting.

Athens, Clarke Co., in the Piedmont Plateau, is at an elevation of a little less than 1,000 feet. A swiftly flowing stream, coursing over large rocks near the old bobbin mill, 2 miles from Athens, and small turbid pools nearer the town afforded fair collecting.

Spring Creek, in Decatur Co., is the best collecting grounds known to me in Georgia. The creek itself is clear and deep, with sandy, or in places rocky bottom. Along its course are many quiet bayous covered with spatterdock leaves, and by its banks many cypress "bays" in which at low water are shallow forest pools filled with life. The surrounding country is covered with long leaf pine forest, or under cultivation.

Bainbridge, Decatur Co., and close to the Alabama and Florida lines, is on the Flint River, a large turbid stream. The most favorable collecting was at Douglas Lake, 4 miles south of the town. This is a clear, shallow lake, filled with aquatic vegetation and surrounded by moss draped oaks and cypresses.

Oglethorpe, seat of Macon Co., is in fairly flat country, a little below the Fall line. Favorable collecting was found at a mill dam and the stream below it, near the town.

Clayton, Rabun Co., is near the North and South Carolina lines, and is surrounded by mountains rising to 3,500 feet and is itself at an altitude of 1,800 feet.

Stone Mt. is in Decatur Co., 16 miles from Atlanta.

Offerman is in Pierce Co., with conditions very similar to Blackshear. I collected along the Satilla River, about 4 miles from the station.

Williamsonia, a New Genus of Dragonflies from North America.

By Wm. T. Davis, New Brighton, Staten Island, N. Y.

While examining the collection of dragonflies in the American Museum of Natural History I came upon a female example of a species unknown to me. It bore the label "Paterson, N. J., May 4," and had been collected and presented to the Museum by Mr. John A. Grossbeck.

Reference to the "Key of North American Genera of Cordulinæ" on page 484 of Dr. Needham's "Aquatic Insects in the Adirondacks" placed the specimen in division "a" having "Veins M4 and Cu1 in the fore wing parallel or a little divergent apically, the number of rows of cells between them increasing toward the margin of the wing." The only genus placed in this section is *Neurocordulia* to which belongs *N. obsoleta* Say and *N. yamaskarensis* Provancher. In these insects, however, the triangles and subtriangles of the fore wings are often divided into three cells by cross veins, the triangles of the hind wings also have each a cross vein, while in the New Jersey specimen all the triangles of both wings are open, that is without any cross veins. *Neurocordulia* has many cells in the space beyond the anal loop, while the specimen in question has but a few and these arranged in three rows.

In a foot note on page 484 already referred to, Dr. Needham says in reference to section "a" of his table, "One species, the little *Cordulia lintneri* of Hagen, may seem to belong in this section of the table, though of course not in the genus *Neurocordulia*; it is also a synthetic type, lacking the special corduline features of venation, which I take to be (1) the approximation of veins M4 and Cu1, and (2) the general reduction of cross veins; it shows strong libelluline affinities in the conformation of the anal loop and in the possession of a half-antenodal cross vein just before the nodus. . . . I leave it here in the genus *Dorocordulia* beside the two species with which it has hitherto been associated."

The New Jersey specimen proved to be the *lintneri* of Hagen, and Mr. E. B. Williamson has since kindly checked up my determination. The genus *Dorocordulia* in which this species has been placed has the triangle of the fore wing open, subtriangle of hind wing not present, also veins M4 and Cu1 in the fore wing approximated toward the margin of the wing. These characters are good for *Dorocordulia lepida* and *Dorocordulia libera*, but will not cover *lintneri*, which has the triangles open in the specimen in question, subtriangles of hind wing absent, but veins M4 and Cu1 are separated much as in *Neurocordulia*, that is the number of cells between them increases toward the margin of the wing.

As to whether the triangles of the fore wings have cross veins or are without them must not be considered of too great importance, for a series of thirteen specimens of the allied *Helocordulia uhleri* in the author's collection may be arranged as follows:

5 ♂, 2 ♀ with cross veins in both the triangles and subtriangles.

1 ♂ with triangles open, but a vein in each of the subtriangles.

1 ♂ with cross veins in both triangles and subtriangles in the left wing, while the right wing has the triangles open.

2 ♂ with both the triangles and subtriangles open.

1 ♀ with triangles open but cross veins in both subtriangles.

1 ♀ with cross veins in both triangles in the right wing, while the left wing has the triangle open and a cross vein in the subtriangle.

According to Dr. Hagen, Psyche, 5, p. 373, 1890, the unnamed figure 1, Plate 16 in Emmons's account of the More Common and Injurious Species of Insects of the State of New York, is his *Cordulia lintneri*. This figure distinctly shows a cross vein in each of the triangles of the fore wings. Later in the same article Dr. Hagen says of *Cordulia lintneri*, "The position of this rather eccentric, small species is near *C. uhleri*, but it is separated from that species by unusual characters. The anal angles of the hind wings of the male are nearly rounded; all triangles are without transversal veins; only one series of discoidal cells, and a very plain venation." Dr. E. P. Felt has kindly examined the male type of *lintneri* Hagen in the State Museum at Albany, N. Y. and states that "there are no cross veins in either triangles or subtriangles of the fore or hind wings. The illustration by Emmons is incorrect so far as it relates to the type we have."

From the above observations on the wing venation of *lintneri* and from the accompanying plate it will be seen that it does not belong to the genus *Dorocordulia* its last resting place, which has veins M4 and Cu1 approximated near the margin of the fore wing. Reference to Mr. Williamson's paper "A New Dragonfly belonging to the Cordulinae and a Revision of the Classification of the Subfamily," Entomological News, XIX, p. 428, 1908, places *lintneri* in his second group on the majority of its characters and near the North American genera *Neurocordulia* and *Platycordulia*. It has been called a troublesome species, and probably the best thing to do is to make a new genus for it. I would propose the name *Williamsonia*, after Mr. Edward Bruce Williamson of Bluffton, Indiana, the well-known student of dragonflies, with *lintneri* as type of the genus. The table of North American genera may be reconstructed in part as follows:

a. Vein M4 and Cu1 in the fore wing a little divergent apically, the number of rows of cells between them increasing toward the margin of the wing.
  b. Triangles and subtriangles of fore wing with cross veins. Hind wing with subtriangle. Two or more cubito-anal cross veins in both front and hind wings.
    c. Hind wings broad with two rows of cells between anal loop and margin of wing . . . . *Platycordulia*.
      Hind wings broad with one row of cells between anal loop and margin of wing. . . . . *Neurocordulia*.
  bb. Triangles and subtriangles of fore wing without cross veins. Hind wing without subtriangle. One cubito-anal cross vein in both front and hind wings. Wings unspotted expect at extreme base . . . . *Williamsonia*.

Following these genera would then come those having veins M4 and Cu1 in the fore wing approximated toward the margin of the wing.

Dr. Hagen in Pysche in the article above referred to states that two females of *lintneri* were collected at Saskatchewan, Lake Winnipeg, in 1860 by Robert Kennicott; that eight specimens, four males and four females were collected by Dr. Lintner on May 27, at Center near Albany, N. Y., and he adds that "It is very interesting that this apparently arctic species is found in eastern New York." We may add that it is still more interesting that it should be found in New Jersey.

ON NOMENCLATURE.

The Principle of Priority—Its Use and Abuse.

The principle of priority in zoological nomenclature is fundamentally a rule of equity. Its chief end is to ensure to every man the credit and reward for his taxonomic endeavor and labors. It is, in brief, this—that the first to recognize and *describe* some living being as heretofore undiscovered shall get the credit and recognition due to his keener perceptions or greater knowledge. In the abstract, nothing can be urged against its application—its concrete workings are the subject of much heartburning, controversy, and even bitter recrimination. The difficulty is not with the law itself, but it lies in its application, or, rather, its non-observance. Every nomenclatorialist is, and has been, a law unto himself. When the strict application of priority has clashed with some cherished and long-familiar name, it has been ruthlessly sacrificed on some pretext or another. Few, if any, seem to have the courage to follow where logic leads them; fewer still are those who are impartial and impersonal enough to recognize and set aside their own prepossessions as cold-bloodedly as they do another's.

In nomenclature to-day we have *one* law of priority and as many applications as there are men. All profess entire allegiance to the principle, but—with exceptions. Dr. Puton, the noted French entomologist, in the preface to his Catalogue of the Palæarctic Hemiptera, does homage to priority "mitigated by a wise prescription." Lo! you! the milk in the cocoanut! Mitigation! Wisdom! Prescription! Who shall judge as to the mitigation? Whose wisdom shall apply? Who shall set the prescriptive limits? Shall it devolve upon the users of the law? Shall it be governed by an oligarchic Committee? Shall it be finally, the plaything of each and every Zoological Congress to be changed perhaps every year according to the dominant sentiment in a more or less heterogeneous and (on this point), uninformed assemblage? In the first and last instances, the longed-for stability will be as much a will-o'-the-wisp as it is to-day, for we shall have never-ending changes and no man will know where he stands. In the second case, a considerable number will adhere to the findings of such a committee, especially those who have little independence of thought and who will then, as now, kow-tow to any Grand Panjandrum, as well as certain ones who have magnanimity and selflessness enough to acquiesce rather than retard the progress of science by petty bickerings over immaterial things. Outside of these there will be a large minority of active, intense workers, who are conscious of better facilities for information and who will continue to be independent of any Committee or other agency tending to restrict their scientific independence, just as there are now.

On the other hand, it must be admitted that there are any number of nomenclatorial body-snatchers, prowling around the forgotten graves of forgotten men, together with a goodly sprinkling of eugenists, always ready to improve the child of another's brain though themselves barren as the desert. These resurrectionists dig and delve and search and attempt to revivify things as dead as the Pharaohs and not nearly as useful and well-preserved. Nevertheless, much good has been done by these revivifiers, even though their wheat be deeply overlaid with chaff; they garner that others may winnow.

In the eugenists, the improvers, the emmendators classical and otherwise, we have the head and front of the offending! From much of their work has arisen this unending synonymy, this endless labor to arrive at a firm foundation for nomenclature. Not content with the name another has originated, they change, improve, amend, and frequently, being men of real eminence themselves, they have succeeded in imposing their will on their followers, till some one keener, more logical has arisen to overturn their work. Thus many a man has gotten credit for another's work, merely through correcting a spelling, or, less legitimately, by renaming something because the other man's naming did not appeal to his fancy.

Thus, the whole nomenclatorial question is complicated by the unwarranted activities of misguided enthusiasts. Priority is always at the mercy not only of individual judgment, but also of individual prejudices, of personal caprice, of neglect, of lack of courage. Repeated instances might be cited of men who knowing a thing was wrong, pointed it out, and not only left it uncorrected, but also continued its use themselves.

The principle, therefore, is in theory, rigid; in practice more flexible than a serpent and more tortuous than a maze. In order to render it that firm foundation for nomenclature it was intended to be, wise rules should be formulated defining its scope and restricting its workings, if necessary. It should be rendered impossible for zoologists to make *any* emendations, classical or otherwise; fixed rules for determining priority should be adopted; a restriction should be placed on revival of old names of doubtful validity; steps should be taken to do away with species unrecognizable without the types; and above all, human nature should be reformed and perfected, and every nomenclatorialist should be endowed with keenness of understanding, logic, unselfishness and impartiality, in order to apply the law of priority with even-handed justice. When this ideal is attained, then nomenclature will be on a firm foundation.

Observe the law impartially, enforce the law rigidly, there lies the one and only road to a stable nomenclature.

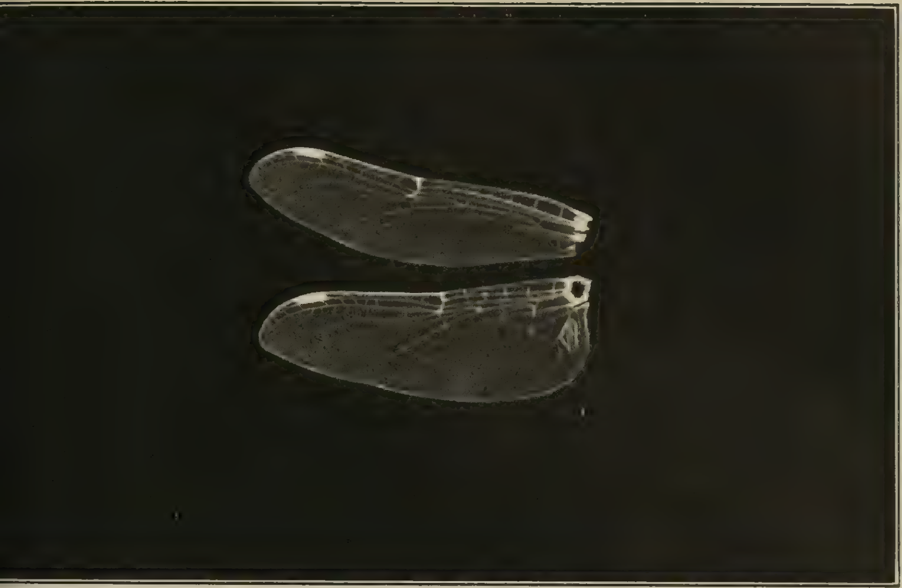
J. R. T-B.

Table of Hickory Leaf Midge Galls.

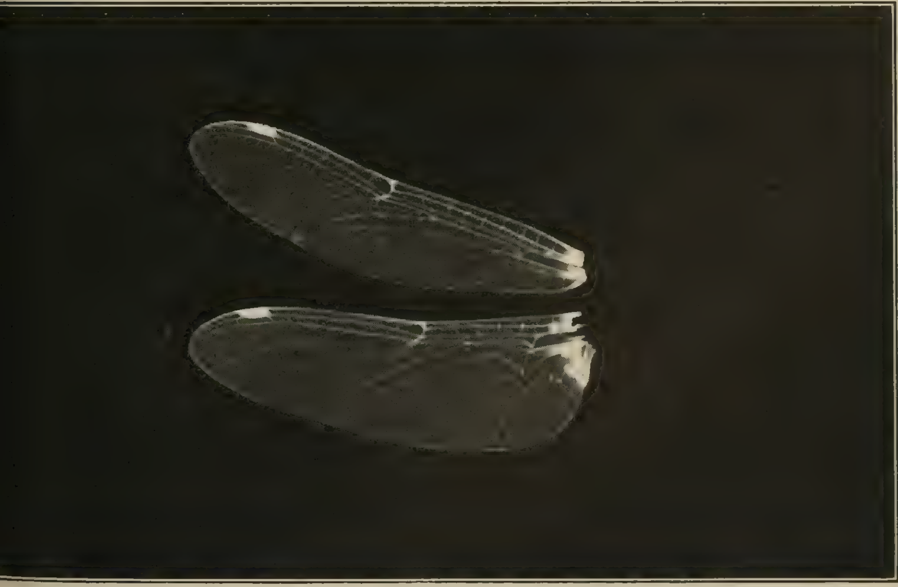
By E. P. Felt, Albany, N. Y.

Hickory or *Carya* comprises a number of closely related species well separated from other members of the flora. Our studies of gall midges have shown the genus *Caryomyia* to be confined to *Carya* upon the leaves of which a number of closely related midges produce very similar galls.

This table is designed to assist in the identification of the species by characters found in the galls and larvæ. It should be considered as tentative and suggestive rather than as final, owing to the variations in the galls and the difficulty of finding satisfactory specific characters in the larvæ. It is probable that other species of *Caryomyia*, aside from those tabulated below, will be found to inhabit the hickory. Certain species are tentatively assigned to this genus.



WILLIAMSONIA LINTNERI ♀



DOROCORDULIA LEPIDA ♀

- a Breast-bone unidentate, slender.
  - b Gall distinctly hairy.
    - c Gall globose, small, thin-walled, long-haired, reddish *holotricha* O. S.
    - cc Gall subglobose, large, thick-walled, short-haired, reddish . . . . *persicoides* Beutm.
  - bb Galls smooth or at most sparsely pubescent.
    - c Gall tubular, greenish or blackish. . . . . . . *tubicola* O. S.
    - cc Galls globose.
      - d Gall thin-walled, purplish or red. *sanguinolenta* O. S.
      - dd Gall small, thin-walled, depressed, yellowish green or brown . . . . *similis* Felt.
      - ddd Gall small, thin-walled, with empty cavity above, green or brownish . . . . . . *inanis* Felt.
      - dddd Gall small, thick-walled, depressed, yellowish brown or green . . . . *consobrina* Felt.
      - ddddd Gall large, thick-walled, yellowish or brown *antennata* Felt.
    - ccc Gall conical, the apex long . . . . *caryaecola* Felt.
    - cccc Gall an irregular midrib swelling . . . . *cynipsea* O. S.
  - bbb Gall not produced, the larvae exposed on leaf and causing a yellowish spot . . . . *glutinosa* O. S.
- aa Breast-bone bidentate.
  - b Breast-bone slender, the teeth approximate basally.
    - c Gall small, globose, with long, erect, reddish or fuscous hairs . . . . *thompsoni* Felt.
    - cc Gall an irregular swelling on the husk . . *nucicola* O. S.
  - bb Breast-bone broad, the teeth widely separated.
    - c Gall globose, thin-walled, yellowish green or brown *caryæ* O. S.

A Northern Record.—Mr. R. N. Buckstaff reports large numbers of *Zerene* (*Colias* Fab.) *caesonia* June 16 near Oshkosh, Wis. This butterfly is fairly common in the south and extends into South America.

NOTA BENE.—The next meeting of the Brooklyn Entomological Society will be held at the Children's Museum, 185 Brooklyn Ave., October 16, at 8 P. M.

Proceedings of The Brooklyn Entomological Society.

The regular monthly meeting of the Brooklyn Entomological Society was held at 55 Stuyvesant Ave., Brooklyn, May 15, with sixteen members present.

It was voted that the Bulletin volumes should begin with the calendar year. Accordingly the present volume 8 is to consist of eight numbers. In this way bills for annual dues shall accord with annual subscriptions at the rate of 20 cents a number.

The Publication Committee reported that the support to the Bulletin to date was all that could be reasonably expected, that contributions on hand insured high class material only, and sufficient for the next three numbers.

Mr. F. C. Pasch was appointed to the Outing Committee, vice Mr. Olsen, resigned on account of the pressure of Society work.

Messrs. Chas. Schaeffer and J. R. de la Torre-Bueno were elected a Committee to represent the Society in the American National Committee on Nomenclature, a part of the International Committee which is to report to the next International Entomological Congress.

Mr. Franck showed an aberrant *Eudamus bathyllus*, taken in Prospect Park, in which the characteristic white markings of the primaries were reduced to barely visible spots.

Mr. Torre-Bueno read a paper on the Adaptation of the Aquatic Hemiptera to their Environment, which will be printed later.

Mr. Dow spoke briefly on the joy of sifting for beetles, as exemplified by an expedition to Kenilworth Swamp, N. J.

R. P. Dow,
Secretary.

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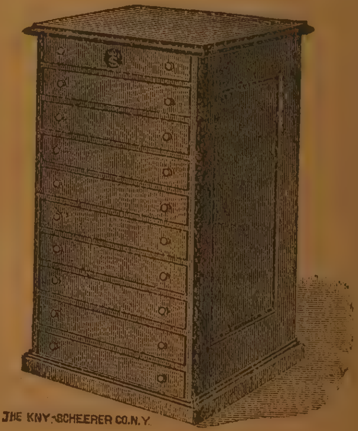
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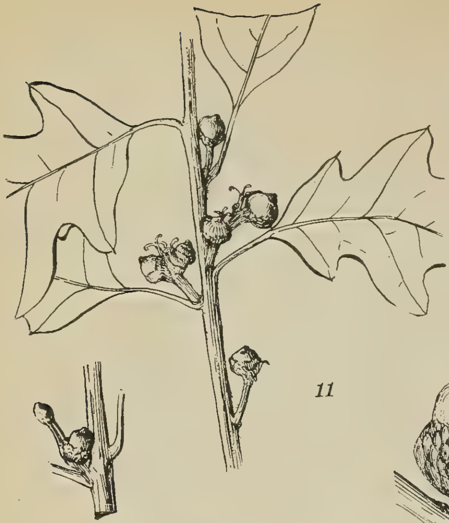

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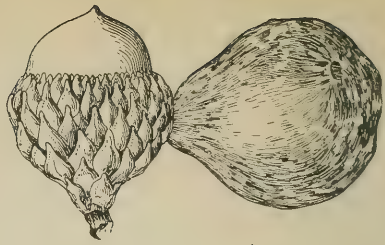

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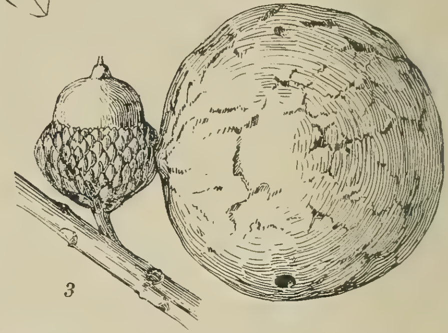

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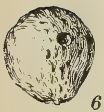

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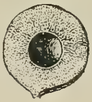

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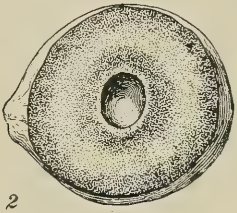

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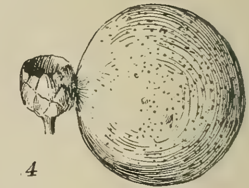

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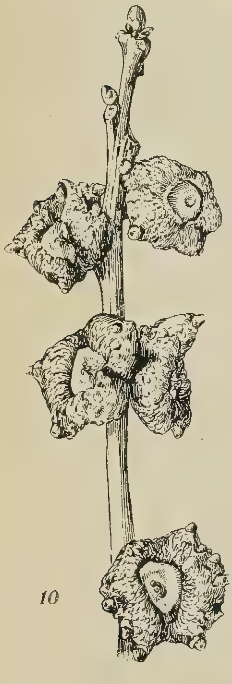

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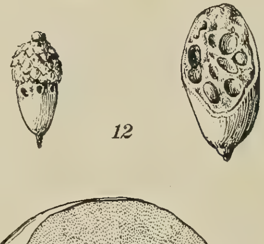

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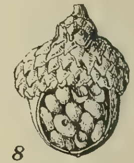

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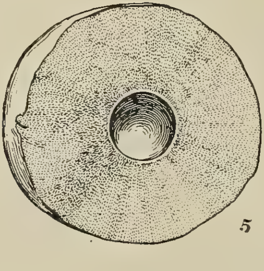

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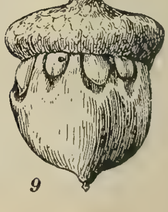

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BULLETIN
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The North American Acorn Galls with Descriptions of New Species

By William Beutenmuller, New York.

The following Cynipid galls are known to me to occur on and in the acorns of different kinds of oaks. Other new species will undoubtedly be found when we know more about the natural history of the Cynipidae. The figures on the plate were made by Mrs. E. L. Beutenmuller.

Amphibolips prunus Walsh. figs. 1, 2.

Cynips quercus prunus Walsh, Proc. Ent. Soc. Phila., vol. III, 1864, p. 639; Am. Ent., vol. I, 1869, p. 104, fig. 80.

This is the well known oak plum gall which grows on the acorn cups of red oak (*Q. rubra*), black oak (*Q. velutina*), scarlet oak (*Q. coccinea*), and scrub oak (*Q. nana*). It is bright red, more or less globular and often looking like a marble. When fresh it is solid but fleshy and of apink color inside, shading into yellow toward the middle, where there is a single large larval chamber. When mature it becomes blood red and when old and dry it becomes shriveled and quite hard. It matures late in August or early September, and the fly emerges the following spring. Additional references to the literature of this species may be found in my paper on North American species of *Amphibolips* (Bull. Am. Mus. Nat. Hist., vol. XXVI, 1909, p. 62.

Habitat: New England and Middle States south to Ga., and west to Colo.

hsoni Institutio
JAN

Amphibolips gainesi Bassett. figs. 3, 4, 5.

Amphibolips gainesi Bassett, Trans. Am. Ent. Soc., vol. XXVI, 1900, p. 322; Dalla Torre & Kieffer, Gen. Ins. Hymen. Cynip., 1902, p. 67; Das Tierreich, pt. XXIV, 1910; Beutenmuller, Bull. Am. Mus. Nat. Hist., vol. XXVI, 1909, p. 63, pl. XV, figs. 4, 5.

The gall is attached by a single small point to the side of an acorn cup of the black jack oak (*Q. marylandica*). It is perfectly round and smooth and measures from 24 to 42 mm. in diameter. When dry it is brown and rusty brown inside and of a dense corky consistency. Internally it contains a large central larval chamber, which is firmly imbedded in and adherent to the surrounding mass. The imago is one of the largest species and is closely allied to *A. prunus*. The gall is probably red or yellow when fresh.

Habitat: Texas.

Amphibolips fuliginosa Ashmead. figs. 6, 7.

Amphibolips fuliginosa Ashmead, Trans. Am. Ent. Soc., vol. XXII, 1885, p. 294; ibid vol. XXIV, 1887, p. 130; Dalla Torre & Kieffer Gen. Ins. Hymen. Cynip. 1902, p. 67; Das Tierreich, pt. XXIV., 1910, p. 63, Beutenmuller, Bull. Am. Mus. Nat. Hist., vol. XXVI., 1909, p. 63, pl. XV figs. 6 and 7.

A small red gall measuring from 8 to 12 mm. in diameter. It is rounded or spherical, smooth, and of a corky texture, with a central larval cell. Dr. W. H. Ashmead states that the galls drop from large trees of willow oaks (*Q. laurifolia*) in August and that he was unable to find out whether they grow on the twigs or leaves. I am of the opinion that it is an acorn gall, growing on the cup, owing to the resemblance of the adult and structure of the gall to that of *A. prunus*.

Habitat: Florida.

Callirhytis fruiticola Ashmead. fig. 8.

Callirhytis fruiticola Riley, ms. Ins. Life, vol. V., 1893, p. 196; Murtfeldt, Ins. Life, vol. VI., 1894, p. 322; Ashmead, Proc. U. S. Nat. Mus., vol. XIX., 1896, p. 131; Dalla Torre & Kieffer, Gen. Ins. Hymen. Cynip. 1902, p. 66; Das Tierreich, pt. XXIV, 1910.

The gall of this interesting species occurs in the meaty part of acorns of scarlet, red and black (*Q. tinctoria*) oak and probably others belonging to the red oak group. It consists simply of a hard rounded kernel or larval cell imbedded in the inside of the acorn. Sometimes there are more than a dozen larval cells closely pressing upon one another and filling the whole interior of the acorn. The gall matures in the autumn and the adult emerges next spring. A gall similar to that of *fruiticola* was found by Mr. L. H. Weld, at Evanston, Ill., in the acorn of the swamp oak (*Q. platanoides*) which, when the adult is known, will undoubtedly prove to be a new species.

Habitat: N. Y., Conn., N. J., Penn., Ill., Mich., Mo.

Andricus operatola Bassett. fig. 9.

Andricus operatola Bassett, Trans. Am. Ent.Soc., vol. XXVI., 1900, p. 315; Dalla Torre & Kieffer, Gen Ins. Hymen. Cynip., 1902, p. 65; Das Tierreich, pt. XXIV, 1910.

Forms a flattened tooth-like or wedge shaped gall on the outside between the cup and the acorn with the ends more or less protruding. It lies in a depression and is of a light brown color. Often there are as many as eight galls on a single acorn. It occurs on red, scarlet, black and scrub oak. According to H. F. Bassett the galls mature in autumn, and early in the spring following part becomes imagos, another part remaining in the larval state another year, while a few remain in this condition still longer, and, as suggested by C. V. Riley, may develop the third year.

Habitat: Ottawa, Can., Conn., N. Y., N. J., Penn., and westward.

Andricus glandulus sp. nov. fig. 10.

Cynips quercus glandulus Riley, Trans. St. Louis Acad. Sci. vol. III., 1877, p. 577; Lintner, 4th. Rep. Ins., N. Y., p. 44.

Cynip glandulosus Cresson, Syn. Hym. N. A., pt. II., 1887, p. 177. *Cynips q. glandulus* Packard, 5th. Rep. U. S. Ent. Comm., 1890, p. 113.

Female.—Form robust. Uniform light cinnamon brown. Legs somewhat paler with the middle and hind femora dark brown. Head finely granulated and subtriangular in shape. Antennæ 14-jointed, stout and almost uniform in width, 1st. joint long, 2nd. small, 3rd. long, 4th., 5th., and 6th. shorter than the 3rd. and subequal. The following joints small and almost equal in size. Thorax robust, about as long as broad, finely and evenly granulated. Parapsidal grooves well defined, punctate, inwardly curved anteriorly, thence parallel to nearly the scutellum where they curve outwardly and converge, though fairly well apart. Anterior parallel grooves fine and extending a little beyond the middle of the thorax where they are slightly divergent. Lateral grooves short. Collar rugose. Pleuræ minutely aciculated. Scutellum more granulated than the thorax with a broad prominent transverse shining groove or channel at the base. Abdomen well rounded dorsally, the large second segment smooth, the following segments microscopically punctate. At the base of the second segment are a few minute whitish hairs. Sheath of ovipositor black, stout and extending upward but not beyond the anal segment. Wings pale, hyaline, cross and basal veins heavy, yellowish brown and very slightly clouded with the same color, outer veins faint; radial area broad and open at the costal margin; second cross-vein bluntly angulate or rounded outwardly; areolet very small; cubitus fine and not extending to the cross-vein. Length 2.50 to 3.25 mm.

Gall.—In the cups of acorns of swamp white oak (*Quercus platanoides*), burr oak (*Q. macrocarpa*), dwarf chestnut oak (*Q. prinoides*), chestnut oak (*Q. prinus*), and probably other trees belonging to the white oak group. Monothalamous. The gall is formed in a cavity, causing more or less bulging and swelling of the acorn cup. It is an elongate body averaging when well developed 5 mm. long and not quite half as wide. The sides are sometimes parallel, but more often slightly bulging or sometimes longitudinally ribbed or smooth; whitish green, yellowish, often with a roseate tinge. The base is truncate and covered with a whitish down. The crown is flattened or slightly concave with a small central conical nipple. The mouth of the cavity in the acorn cup is either strongly fimbricated or simple, according to the nature of the cup scales, and thus either concealing the gall or exposing a large part of it. The larva lies in a cell near the top of the gall. Sometimes the galls deform the acorns.

Habitat: N. Y., Penn., N. J., Ill., Ohio, Mo., Conn.

Many years ago the late C. V. Riley gave me a specimen of a gall-fly which he said he had raised from the oak-pip gall in the acorn cups. But the species was never described by him, except from the gall which he termed *Cynip quercus glandulus*. While collecting in the pine barrens at Lakehurst, N. J., very early in May, I took a number of female gall-flies on the twigs of the dwarf chestnut oak, presumably ovipositing in young acorns. My specimens agree in all particulars with the one given to me by him, and are described above together with his as being the producers of the oak-pip galls. The ripe and well developed gall falls out of its cavity to the ground, where the larva remains within it either to the following spring or the next year. Described from twelve females, three of which have the anterior parallel and lateral grooves black and narrowly edged on each side by the same color.

Andricus perditor Bassett. fig. 11.

Andricus perditor Bassett, Trans. Am. Ent. Soc. vol. XXVI, 1900, p. 313.

The gall of this species is practically nothing more than a deformed acorn of the scrub oak. The eggs are deposited early in spring in the very young acorns of the first year's growth. They are reddish and mature in September and October. When fully developed they turn brown like the color of the acorns.

Habitat: Conn., N. J., Ill.

Andricus eldoradensis sp. nov. fig. 12.

Male.—Body wholly pale yellowish brown, legs somewhat paler, eyes and ocelli black. Head microscopically granulated and with minute hairs. Antennæ 15-jointed, long and slender. Thorax slightly shining, minutely punctate. Parapsidal grooves very deep and prominent, and almost touching the medium groove at the scutellum. Anterior parallel lines and lateral grooves wanting. Scutellum finely rugose with two large basal foveæ, scarcely separated by a ridge. Abdomen smooth and shining. Wings hyaline, veins yellowish brown; radial area closed; cubitus extending to first cross-vein, areolet rather large. Length 2.50 mm.

Gall.—Inside the acorns of *Q. agrifolia.* Rounded bodies or larval cells, sometimes filling the whole interior of the acorn. In shape and structure they are like those of *Callirhytis fruiticola.*

Habitat: Alameda and Los Angeles Co., Cal. (A. Koebele). Type U. S. Nat. Mus., paratype coll. W. Beutenmuller.

The flies of this species are from Los Angeles Co. and are labeled "from acorns of *Q. agrifolia*", while the galls are from Alameda Co. It is barely possible that the flies have nothing to do with the galls, but both bear the same number, 109.

IDENTIFICATIONS.—The Secretary sets apart the hour from 12 to 1, Mondays, Tuesdays, Thursdays and Fridays, at his office, 15 Broad St., Manhattan, room 9, Ninth floor,to receive visitors interested in Entomology, and aid them if possible, to identify, especially Coleoptera and Lepidoptera. Beginners will be made especially welcome.

The Work and Times of Dr. Harris

By R. P. Dow, Brooklyn, N. Y.

Two allusions have already been made in the historical papers of the Bulletin to Dr. Thaddeus W. Harris, one regarding his attempt to restore the vermin-eaten collection of Say, the other beginning a life-long correspondence with Rev. William Kirby. Any adequate notice of this pioneer should be a history of American entomology for 35 years. During half that period there were not five men in this country worthy of the name entomologist.

Eight years younger than Thomas Say, Harris had a career comparable in many respects with that of Kirby. After a University education, becoming the typical country collector in all orders, he developed into the first American Entomologist of his time and the central figure of the Boston Society of Natural History, as was Kirby of the Entomological Society of London.

Coming of a scholarly family in Cambridge, Harris went through Harvard and attended the slender course of lectures in Natural History by Prof. Wm. D. Peck, but apparently did not take up entomological pursuits, until influenced by Peck after his graduation. The earliest specimens in his collection date from his residence in Milton, Mass., where he began the practice of medicine, in 1821 and where he practiced in all for eleven years.

For the public data of Harris' life there is a memoir by his son, a briefer one by his pupil, Major Thomas Wentworth Higginson, and a volume of his correspondence, edited by Samuel H. Scudder. In the last the most interesting are the letters exchanged with Nicholas Marcellus Hentz, a Frenchman by birth, who came to this country in boyhood and was teaching at the time in Northampton. Harris was not fond of medicine and never attained to a lucrative practice. He began to be an entomologist. Almost bookless, companionless, he and Hentz worried together over the identification of their commonest things. Even this was not to last. In 1826 Hentz was called to a chair in the University of North Carolina. Harris hoped to follow him there, and even suggested that he might read up to fill a chair of Materia Medica or Gynecology. Fate ruled otherwise, or Harris might have passed his whole life, a square peg in a round hole. The post of Librarian at Harvard University became vacant and Harris accepted it gladly. This was in 1831, when he was 35 years old, and he held the position for the remaining 25 years of his life.

The friendship with Hentz was permanent, and Hentz was an entomologist always. He specialized later in Spiders and his work on this subject has been republished, edited by J. H. Emerton. His beetle papers were sent to Harris. At that date, 1827, Dr. Pickering was editing the publication of the Philadelphia Academy of Sciences and was complaining of a shortage of good "copy". Like other American pioneers, Hentz has suffered from the synonymy, but he still has nine species in the checklist, *Lebia grandis* being perhaps the best known.

A bronze tablet on a house in Milton bears the inscription:—

> "In this house from 1824 to 1831 dwelt Thaddeus William Harris, M. D., botanist, entomologist, and finally librarian of Harvard College. In each capacity he won for himself fame and gratitude. He had the modesty and unselfishness of true science, with what may be rightly called the true chivalry of spirit."

The post of Librarian of Harvard had its compensations and disadvantages. Far from being a sinecure, yet the care of 30,000 volumes left a little more leisure for insects and at more fixed times than the care of a country medical practice. It gave a certain prestige, socially and otherwise.

When Dr. Harris removed to Cambridge he occupied the house that had been the residence of his great-grandfather, Thaddeus Mason. Some time afterward he erected the house in which he died, and which is still in the occupation of his surviving daughters, (1913). The granite front door step of the Mason house was transported to the new home where it still rests, worn smooth by the feet of six generations.

But the salary was anything but large. Moreover Dr. Harris had always at least a dozen little hungry mouths to feed. Small wonder, then, that he sent his entomological articles to the New England Farmer, as he had begun to do at Milton seven years previously. The editors importuned him constantly for papers of economic interest and it is to be hoped that their checks in payment were for satisfactory amounts. Harris' contributions were frequent for 22 years. He also wrote for many other periodicals designed for farmers. The vague hope of a professorship was never fully realized. For five years from 1837 Dr. Harris filled a vacancy in the Chair of Natural History, giving a course of lectures twice a week to the senior class. Not satisfied with this, he organized an evening class for voluntary attendance, which was, in fact something like the Entomological Societies of to-day, with one speaker having the floor most of the time. John W. Randall, a senior from Maine, attended these meetings. He turned to beetles, which were also Harris' favorites, and collected diligently near Cambridge during the academic season and in Maine during vacation. Two papers were the result of his efforts, in which 87 new species were described. Randall became a physician, but never reappeared as a coleopterist. Years later his papers were edited by P. S. Sprague* and E. P. Austin, who reidentified the species, of which 47 are saved from the synonymy.

When Prof. Peck died in 1822, Harris was the only entomologist worthy of the name in Massachusetts for some years. He was compelled to find through correspondence congenial companionship denied to him through personal contact. This was in insect study only, for he numbered his social and scientific friends as freely as he chose. His correspondence with Kirby began in 1822. During the same year Prof. Nuttall,† the botanist introduced him by letter to Thomas Say at Philadelphia. The two men never allowed their correspondence to flag. At Say's suggestion Harris shipped his whole collection to Philadelphia in 1825 and Say labelled it as far as he could. All these labels remain intact today, a fact which adds greatly to the historical interest of the Harris collection.

With Prof. Hentz there was always a regular interchange of letters. Hentz forwarded his collection for sale in 1836. It was found to rival the Fenton collection at Boston. It was hard, however, to raise the money asked for it, $1358. This included some costly books, sets of Olivier and Voet, for example. It was finally raised and the collection incorporated with others in the Boston Society of Natural History. Little of it was left by 1861. Insects are fragile; constant care of them a necessity. There were few who looked at them for twenty years. Moreover the scientists of the old days pinned their faith on printed descriptions. It did not occur to Harris and his confreres that subdivision would be carried to a point where a TYPE was everything and a description of secondary importance at best. It took Leconte, Schwarz and Henshaw to teach the value of a type. Eschscholtz and Mannerheim gave types away without hesitation when they had compared other specimens with them.

**Pterostichus spraguei* Lec. preserves this name in Coleopterology.

†*Trichodes nuttalli* Kirby preserves this name in the checklist.

The plan which Dr. Harris made as early as 1825 to publish a list of local insects—a *Faunula Insectorum Bostoniensis*—was never carried out, largely through difficulty in establishing names of the Diptera, Hymenoptera and some of the lower orders. Literature was hard to acquire and money to acquire it harder to get. The European writings came one by one, not from library funds but out of Harris' savings. Literature on many orders was not in existence. Of every work that came into Harris' possession he made a careful index of species, all through long tomes of Olivier, Fabricius, Schœnherr, and many others. As a substitute for his original plan he prepared a list of the insects found in Massachusetts, and this was appended to Hitchcock's Geological Report. Dr Harris received no remuneration whatever for this work. Ten years later he was appointed by the State as one of a commission to make a more thorough survey. In this capacity he prepared his "Report on Insects Injurious to Vegetation." The State paid him $175 for this work. The following year it was re-published by himself as a treatise, with a second revised edition ten years later. The edition generally seen nowadays was published by the State ten years later still, after his death, and the colored plates therein were never seen by him.

A most valuable friend was a classmate, Rev. L. W. Leonard, who settled in Dublin, N. H., an enthusiastic collector and breeder of all orders of insects. This gentleman, whose name is preserved in the checklist by *Melanotus leonardi* Lec., sent on one occasion to Harris 600 specimens of beetles, probably over 200 species, caught in the shadow of Mt. Monadnock. Leonard made no effort to describe species, presumably on account of lack of literature. He afterwards sent quite a deal of material to Leconte. Harris himself had only 375 species of beetles in 1825.

In 1830 Harris met Major Leconte, though possibly not for the first time. The latter, recently returned from Paris, had brought hundreds of drawings of beetles of the Dejean collection, and devoted much time to a comparison, which resulted in many changes in names. Leconte advised strongly that Harris should re-publish all his descriptions of new species to make them more accessible. One reason for this counsel was the attitude of Dejean himself ,who slighted many species named by Say and renamed them, alleging that he could not read the English descriptions. There were two sides to Dejean's attitude. The old school held vigorously that all scientific descriptions must be written in Latin. Leconte the younger thought so, too, and did it up to about 1873. Harris was a good Latinist but wrote his descriptions in English, sneering a little at the usual crude efforts in "dog" Latin. Harris also had, as Leconte pointed out, about 200 new species in various orders in his cabinet, which could be added to a symposium of new or redescriptions to be contributed to Silliman's Journal which was at this time the only scientific periodical in the United States.

In 1837 Harris began a correspondence and exchange of specimens with Dr. Chas. Zimmermann. This gentleman is one of the most interesting characters in the history of our study. Although his father was a carpenter he himself seems to have been thoroughly educated, and at all events he acquired a mastery of the English language, virile, if idiomatic, as his correspondence shows. He came to this country in 1835. M. Sommer*, the banker of Altona, near Hamburg, an ardent collector and patron of many entomologists, lent aid to his trip.

Zimmermann was to send insects to him for distribution to those who would buy at $5 a hundred, rather a low price, considering the collector and the scarcity of American material. Of his experiences in America the following letter tells more than a volume. Of hundreds of unpublished letters read to find historical material, this is the best. Dickens could do no better.

***Cicindela sommeri* Mannerheim is named for him.

Columbia, S. C., June 9, 1841.

Dr. W. T. Harris:

Dear Sir: Your letter of Feb. 9 has arrived at my hands. I got it yesterday by private conveyance. If I had it in due course of mail in February, it would have put me in a fever, and caused me to travel post-haste to Cambridge—but, Gods! what tribulation! You doubtless are doomed to become a second Hercules, to clean the thousand stables (—Say's insects) of Augeas (—the Philadelphia Society) from filth. It is rather late now in the season, and I fear, I shall not have time sufficient to travel this summer 1,000 miles North, and then 1,000 miles South again, but I may give you counsel, that may answer even better than my personal presence. It is at least well worth to be looked at and taken into consideration, for it is fraught with balm, and proof for vexations got up at Philadelphia, if you should not have done with them yet. "Put Say's collection in as many boxes as you got with them; don't trouble yourself with cleansing the bugs, don't vex yourself with fixing them on pins in rank and file, don't spend a moment time to determine the species, and don't write to the Society in other words than the following: ....hereby returned that most valuable collection of the late Mr. T. Say, in as fine an order as these priceless remains of that most indefatigable and most disorderly naturalist's collection of big and small bugs deserve." This your letter will then be read on one of the next meetings of the resident members, and will be handed round from man to man till all have seen it. Then the foreman will ask: Gentlemen, will you now please to have the boxes opened and put to your inspection? and the answer will be "Never mind, Mr. Foreman, another time will do!" which means: have Say's collection of insects put off the table, which means: let them be d——d forever. To be sure, nobody at Philadelphia has an idea of looking at those insects, and nobody of course will ever appreciate the labor of your hands bestowed upon them. But if, in good earnest, you should put (or have put) those insects in the very best order, do you believe that any Philadelphian will thank you for your trouble? Do you believe that the Philadelphians can find any interest in the collection of the late Mr. Say? Do you believe that those insects will escape the ravages of the vermin, when boxed up at Philadelphia? Never mind the Philadelphians. They have more to do than look at insects and insect-fragments, they have to make shinplaster etc., which is far more to their liking and capacity. Never mind the Philadelphians. I have little doubt, that, if you would offer them a trifle of money for Say's collection, you would have it, and get many thanks besides. Try! At any rate, you seem to take the business entirely too serious, and you spend your time in exchange for vexation and anger, and what profit has your family from it? Never mind the Philadelphians.

After I left Cambridge in November 1839 I arrived by way of New York at the respectable city of Baltimore, finely situated and full of banking vermin, poverty, debts (public and private) and young whig associations, hard cider and log cabins, Tippecanoe songsters, office expectants, and superabundance of revivals and piety. My intention was to be off again after a few days for the South, to repair there my entomological losses; however Pastor Morris and some other friends, and the big snow, and a very comfortable boarding house kept me there till Spring 1840. Then I received letters from Europe announcing the death of my Father, which altered my intentions and plans and gave me much to do and to arrange in family concerns. Waiting for farther particulars I remain in a village (Franklin) near Baltimore all Summer, catching insects, playing the piano, falling in love and getting on my legs again. At length, in September, I went to New York, where I got another letter from home stating the death of my Mother. This blasted my intention to pay you a visit, entirely, and I even could not write to you. I saw however our old friend, Mr. Willcox, who showed me a Goliath, got by him at Boston, and told me that he had bought from Mr. Townsend the Columbia River insects then in your hands! ! ! Would these insects have been sold, to make a figure hereafter in some European collection, if the celebrated Society at Philadelphia had any sense for entomology? Hearing that you wished to keep them yourself, I did all I could to prompt Mr. Willcox to hand me over his rights, for something like a good bargain, to make you a present with them....in vain! Two days after I returned to Baltimore, which I after a week left for the South. Since then I have spent the greater part of my time here at Columbia, to get again at well known parts and regions all those species formerly found there. I have pretty well succeeded, and am now about to leave here, and go (next week) to Rockingham (Richmond County, North Carolina) where I have bought a fine garden, and mean to put up a fine cocoonery during this Summer. From there I shall direct very often a letter to you, and I expect you will soon write and direct your letters to me there.

Since I left Baltimore I had to write so many letters to my Sister and relations in Europe, that I postponed all communications with my friends in this country, not knowing exactly, if I should be long enough on one and the same place, or remain in this country at all. Therefore did not your letter reach me sooner, for Mr. Morris did not know where to direct it, and it would have arrived later yet, but for my purchase at Rockingham. Then I wrote to him and reported him to send my books and insects, and with his answer I received your letter, too.

In report of my collection I am happy to say, that it has increased considerably, though the number of species falls very short of what I possessed formerly. I also received many books, among which is the whole of Dejean's writings, Fischer's Entomographie, the Annales of Paris etc. In my leisure hours I shall now write a catalogue of my collection, for you know, that I am fond of entomological studies; but though agreeable to me, entomology IS NOT, WAS NOT and NEVER WILL BE a bit more than an object of recreation in leisure hours. I am therefore never troubled with other people's collections, and least of all with public collections. I also believe, that all public collections of insects are entirely useless, unless a salaried inspector takes care of them, "as his official duty", and till such regular inspectors are provided for, public collections are very apt to serve for nothing but to provide food for vermin.

But—how is your family; Well, of course, and in first rate trim; the sweet little pretty girls as well as the hearty boys: Harriet, Emma, Kitty, merry Charles, strong "what's his name?" gentle Holbrook, sober minded Thaddeus, and the baby boy. I confess, a very pretty collection. Recommend me to Mrs. Harris, assure her of my sincere respect.

I saw lately here at Columbia a pair of globes (celestial and terrestrial) from the manufactory of Josiah Loring (Washington Street 136, Boston), which pleased me so much, that I wish to buy a couple. They are about one foot in diameter, and of the year 1833. But I understand that there may have been published a later edition with all the recent discoveries, and I would now beg you, when you are in Boston, to step up to Washington Street and inquire of the maker the following points: (1) of what year are the newest globes? (2) are they of equal workmanship to those of 1833? (3) what is the price? (4) are there globes of the same maker of different sizes? Then, let me know this in your next letter, which I shall expect at your convenience "at Rockingham", North Carolina.

Some days ago I received a piece of intelligence, which may interest you, and your many entomological pupils not the less, to wit: Mr. Nanning Köster at New York has imported "genuine Berlin insect pins of every size," which he sells at very reasonable prices. Let your pupils provide themselves. I also heard lately, that Mr. Townsend is to go (or has gone already) to Oregon again, but I am not certain about it, for America has become the country of humbugs and hoaxes, as it is the country of financial quackeries. If he brings good beetles from there, I shall buy from him many.

Yours with sincere regards,
Charles Christoph Andrew Zimmermann.

Zimmermann knew Burmeister before coming to this country and supplied all the American specimens of Scarabæidæ used by that master in his Monograph. A genius, yes. He played the piano, tuned pianos, taught school, doctored sick mules, lectured, made friends everywhere—the best of friends. He made a fortune—in Confederate money. He met a widow, courted her that afternoon, married her the next day, quarreled with her desperately before night, and lived happily with her ever afterwards. Dr. Hagen wrote a biography of him, compiled from his own diaries, to which little can be added.

In after years he became a most devoted friend of Leconte, and his types went with the Leconte collection to Cambridge. The paper by which he is best known was his monograph on the Scolytidæ, published posthumously. Zimmermann styled them the Hylurgidæ, ignoring the noble name given by Geoffroy, just as the European authors are at present trying to substitute unlawfully the name Ipidæ, from DeGeer, a name sunk, as *Ips* was also a genus, in another family set up by Fabricius. Leconte edited and added to the Scolytid monograph. Zimmermann lived long enough to include the material in the family described by Eichhoff in Berlin in 1867. Zimmermann has 35 species in our checklist.

Of the correspondence with the Melsheimer family, letters are extant dated 1835. Then letters and specimens were exchanged with Dr. F. E. Melsheimer at Hanover, Pa. It may be remembered that Rev. F. V. Melsheimer published a catalogue of the beetles of Pennsylvania in 1806. Had its publication been delayed a year, it would have been a useful document. Dr. Knoch, of Brunswick, Germany, to whom a vast deal of material had been sent for identification, was slow in responding and the booklet went to press without his aid. As it is, only 240 species mentioned have been clearly identified. The collection made by this country clergyman was inherited by his oldest son, J. F. Melsheimer, who also inherited his pastorate at Hanover, Pa. This member of the family is the one to whom constant reference is made in Say's writings. About 1821 some of Say's admirers in Philadelphia, wishing to raise money for him without hurting his pride, proposed that he prepare a catalogue of the described beetles of the United States, to be finished within one year. Say refused, knowing that the time was too short, and preferring, as well, to devote his own time to the description of new species. Nevertheless he realized that the project was of great importance, although beyond his power. He wrote about it to both Melsheimer and Harris, proposing that both should keep all records toward this end. Melsheimer did. A friend, Rev. Daniel Ziegler, had a pastorate at York, 18 miles away. He was also a German, and he joined in the catalogue project with enthusiasm. He published but one paper, in the Proc. Acad. Nat. Sci. Phila., describing 36 new species. His collection and manuscripts descended to the younger Melsheimer, for the older brother was short lived. Dr. Franz Ernst Melsheimer was a man of no mean attainments. He kept up the catalogue for many years and in 1842 was elected first president of the Entomological Society of Pennsylvania. In 1848 he offered his catalogue to the Smithsonian Institution of Washington for publication. The mss. were submitted to Dr. S. S. Haldeman, of the University of Pennsylvania, and Dr. J. L. Leconte. Both authorities, not only advised its publication, but volunteered to bring it up to date (1851) and to see it safely through the press. It was brought out in July, 1853, and remained the standard, in fact the only list until the publication of the checklist of Crotch in 1873. Species in the Melsheimer list are not numbered, but the original description is in every case cited, and there is included a fairly satisfactory synonymy. Its historical value cannot be easily overestimated. The species credited to Melsheimer in the Henshaw list are 220, but no distinction is made between the three men. In the Melsheimer catalogue they are divided.

When Ziegler died his collection was bought by Louis Agassiz for a song. It contained 11,837 specimens, of which 6,262 were American of 1,794 species. Agassiz also bought the collection of the three Melsheimers, paying only $150. This contained 14,474 specimens, 10,272 American of 2,200 species. The types of both collections were all loaned to Leconte, who wrote in 1875 that he possessed all types of Haldeman, Melsheimer and Ziegler. All now are safe at Cambridge. Ziegler's labels were large and awkward. A Museum attendant threw them away, substituting the neatly written label "Zieg." This nameless man is now past all danger of lynching. The specimens of the eldest Melsheimer are mounted with common brass pins. The specimens of J. F. Melsheimer cannot be so distinguished, but many of them carry Say labels. F. E. Melsheimer used exclusively Carlsbad pins, a little shorter than usual.

Edward Doubleday, lepidopterist, of the British Museum, the reputed inventor of the delightful pursuit of sugaring for moths, visited this country, spending most of his time visiting Dr. Harris in Cambridge. His namesake, Dr. Harris' ninth child was born in 1839, and is now a specialist in the Cicindelidæ and a leading member of the New York Entomological Society.

In 1842 Dr. Harris wrote to a friend that his collection was not only the best in the United States, but was the only one of importance of all orders. It contains, he said, at least twice as many species as the Say collection.

It is remarkable that Harris and Dr. Asa Fitch, the distinguished economic entomologist of New York did not correspond and probably never met. Harris wrote to the Librarian of Yale for Fitch's papers on the Hessian fly, which would have not been the case, had there been an acquaintance between the two.

The friendship with the Leconte family lasted over twenty-five years. It was through Harris' influence that Major Leconte published his Monographs on the Histers in Boston, and that John L. Leconte chose the Boston Society of Natural History to make his debut in his first really great paper. On this occasion Leconte met Louis Agassiz. This meeting resulted in the selection of Leconte for the famous expedition to Lake Superior and the subsequent life-long friendship.

In the mention of coleopterists in this paper there is included every American beetle described up to 1845. The collectors could be counted on one's fingers. There was Joseph Barabino, a New Orleans merchant, who furnished all the local material described by Say, and for whom no beetle has so far been named. No beetle, either, remains named for Mr. Townsend, the pioneer collector of Oregon and Washington territories, who furnished hundreds of types for Schönherr, Reiche, Kirby, Erichson, Germar, Leconte and others. One named for him by Leconte fell into the synonymy. There was a butterfly collector in Philadelphia, he who kept his specimens in tin boxes and melted wax on the bottoms, into which to stick his pins. There were a half dozen Boston collectors, making no pretension to scientific knowledge. A Mr. Wilkes of New York City, was in 1835 an amateur beetle collector. A Mr. Bachman of Charlestown, S. C., had a collection and occasionally bought exotic, showy specimens.

Harris died in harness. The machine wore out in 1855. His collection was bought by friends and presented to the Boston Society of Natural History. It suffered during storage many years ago, but is now reported to be in the best possible condition and in active use. His beetle species in the checklist are 24 with one genus.

Late in 1913 another search was made of the Harris home in

Cambridge, especially for letters. It was rewarded by finding a large package, tied up with Dr. Harris' usual methodical care. All of the Harris correspondence hitherto found was deposited with the Boston Society of Natural History. In the new discovery are six letters from John Abbott, of Georgia, some with the water color drawings which made Abbott famous in entomological history. These are soon to be reproduced in the Journal of the New York Entomological Society. No mention has been made so far of John Abbott, for he was not a coleopterist, nor was he a scientist, even, in the ordinary acceptance of the word. Moreover he was a man of mystery. It is not known whether he was English or Irish. He went to Georgia to become the private tutor of a lad of a wealthy family. While there, he observed closely and drew beautifully a large number of lepidoptera and plants. Of their generic or specific determination he knew little. A large number of descriptions were sent to England and were worked up by J. F. Smith. A work, published in their joint names is still famous, dated 1797. John Francillon, the Strand goldsmith, knew Abbott and bought the beetles of his catch, but Francillon kept his secret, just as nowadays collectors are not disposed to tell where their uniques can be duplicated. At the Francillon sale these very Abbott beetles were bought by Kirby, out of months of savings.

Abbott must have been an old man at the time of the Harris correspondence, since his great work was published in 1797. He quoted prices to Harris, $6 per hundred for insects collected and $1.00 for each 16 water color drawings such as those as appear in his book. He mentions that Major J. E. Leconte had purchased about 3000 of these drawings. What has become of them? At the price, the demand would be unlimited today.

Anent the collections of those days, bisulphide of carbon and chloroform were unknown, and infestation by *Anthrenus* or *Dermestes* was a serious matter. Dr. Harris made a sheet metal receptacle, which he connected with a steam pipe. Boxes were put into it and the temperature raised to the point where the pests were killed. This was the best that could be done and collections were sent to the Doctor from far and near for preservation. One odd accident happened to the butterflies of the Phladelphia man referred to above. For the ordinary cork bottoms this collector had substituted a mixture of beeswax and similar substances. Imagine the result when the unwitting master introduced the box into the heat chamber. Nothing was recoverable from the molten mass.

A Naturalist in British Guiana

By J. M. Geddes, Williamsport, Pa.

About two years ago when Mr. Geddes was a visitor at the Brooklyn Entomological Society, he entertained us most charmingly with a talk on various experiences in the Windward Islands and British Guiana, of catching the *Dynastes hercules* at home in the Windwards, camp life up country in British Guiana, the alleged blood sucking bats, etc. The following paper was written to our friend, Dr. R. E. Kunze, the veteran collector at Prescott, Arizona. Any narrative of the travels of Mr. Geddes reads like a story from wonderland. Hence it is reproduced here without change, a careless impromptu letter to a friend.

The average collector of butterflies who buys from the various dealers lots of showy, tropical flies, knows too little of the hazards incurred by the collectors of them. If he knew more he would place a greater value upon them.

Mr. Geddes writes to us direct:—"I have been working over and spreading some of my Guiana specimens in the last few months, and I have some fine things. I confined myself more particularly to the moths, and only picked up the few butterflies which happened in my way. I have thousands of specimens of the smaller moths of such genera as *Adelocephela*, *Anisota*, *Dirphia*, etc., also some fine things in *Citheronia*, *Eacles*, and allied genera. One of the items of particular interest was that in looking over about 40 boxes of specimens containing ten or twelve thousand individuals, there were very few duplicates, the bunch containing three or four thousand different species or varieties, and a very large percentage of single specimens of one kind. Out of five or six hundred specimens of Syntomidae and closely allied species, I have about one hundred and ten different sorts. I constantly threw away big bunches of what I knew to be commoner species, in order to make room for better material. From time to time as the season advanced into April and May it was very easy to collect a bunch every evening which I couldn't take care of the next day. It almost broke my heart to throw away perfect specimens of Sphingidae and other fine things, but I could only carry a limited amount of baggage and it was costly transportation. I saved a weird and wonderful collection of freaks in the insect world, which happened to drift in, but I mostly confined myself to the moths, and believe me! I sure got some. I have no idea when I will ever get this material worked up, or how I will ever get it identified, but it will occupy me for some time yet."—Editor.

Bartica is at the junction of the Essequibo and Mazareni Rivers, about 20 miles up from the mouth of the Essequibo and some 60 or 70 miles from Georgetown, and is a small trading village, also the location of the penal settlement of the colony. The country in that vicinity is very uninteresting as compared with the wild country up the Essequibo, and the latter cannot be ascended from its mouth except for a very short distance, as it is blocked to boat navigation by a long series of cataracts, for 10 or 15 miles. Everyone going up country goes up the Demerara River to a station called Wismar and then crosses to the Essequibo, a distance of 19 miles, and strikes the river above the rapids, and the stream is then navigable for about 100 miles up before the next rapids are reached.

The climate in this region is not good. All of the Northern coast of South America is low for many miles inland, excepting a few not very extensive stretches of country, until you reach the ranges which encroach on the coast adjacent to the Andean range. The Guianas, Dutch, French and British, are nothing but large swamps from the ocean back for 100 to 150 miles. Of course there are isolated stretches of high land, but not "hills", only small areas scattered miles apart that reach more than 40 or 50 feet above sea level. I never saw a respectable mountain in British Guiana until I got 300 miles from the coast. You can travel those rivers for day after day and the shores are the same always, never rising, just one big jungle. Malarial fever is very prevalent in all this region and some very bad forms of it. It is present always, at all seasons, but is worst, of course, during the rainy spells. The temperature does not vary much, about 70° in the dry and 80° to 85° in the "summer" season, but the humidity is very great, and up country the wet season is very enervating. I had a couple of bad spells of fever when I was up in the "Bush" but I got over them. Once for a week I was afraid I was going to "cash in," temperature 106° one night following a very severe congestive chill lasting about 4 hours. I lived on quinine, 10 grains to the dose every hour for ten hours, and took at least 40 grains a day for a couple of weeks after and then never less than 15 grains daily for two months. I took nearly 3000 grains of quinine during the year I spent in the West Indies and South America, and I still have the malaria bugs in my blood, as it crops out every now and then still if I don't hit the quinine every three or four weeks. No white man escapes malaria in some form or other, who stays any length of time in the tropics, and this region has not a good reputation. The Anopheles mosquito, the carrier of the disease, is very plentiful and found everywhere. Some of the forms of malaria as found up country are very malignant and the locally prevalent "black water fever" will often kill in from 10 to 24 hours after first attack. Even the mild form gives you a very unpleasant time. I know!

The City of Georgetown is built on land lying below, or mostly below, sea level and is protected by huge sea walls or dykes, built by the Dutch more than 100 years ago before the British occupation. It is drained by canals which intersect the city in all directions and empty into the sea at low tide. At high tide the mouths of these canals are closed by gates, or the town would be flooded at every high tide. This coast is all so low that when you approach from the sea, you don't get a sight of land until you are only 12 miles from the port of Georgetown, and a steamer drawing over 18 feet of water has to unload part of her cargo 10 miles out, at the lightship. Barring the ever present malaria, I was very much struck with this region. I saw some magnificent country in the interior. It is one vast jungle, untouched by man except in isolated spots, and only inhabited by the wild animals and a few Indians. It was great collecting, I brought back over 75,000 specimens, many fine things among them, including a couple of hundred new species. The most of the specimens are moths, as that was what I was mainly after, and I didn't bother much with butterflies, except to pick them up as I happened on them. I got a magnificent bunch of different species of Ceratocampidae, some gorgeous specimens of things I never knew existed before and a lot of rarities. I took in a big outfit with me, including a big automobile headlight and calcium carbide light, and believe me! the greatest crowd of "bugs" I ever saw at an arc light in temperate regions wasn't a drop in the bucket compared with the legions and vast hordes of insects that I witnessed congregated around this one light in the jungle. As an example, take a single night in April when I used this big light on a little knoll in a clearing I made on the river bank. The river (Potaro) was about a half mile wide. The aggregation around that light after it had been running for about an hour was something marvelous to see. The cloud of insects was so thick right around the light that it was a matter of rushing in and picking out a couple of specimens which had lighted on the sheet (the light was backed by a 20 by 12 foot canvas sheet) and then backing off for 50 feet and cleaning the small insects out of eyes, nose and mouth. It was simply wonderful to see the bunch of stuff that came to that light. Not only were moths attracted, but flies, dragonflies, butterflies, wasps, bees, and every order of insect on the list. Bats and small birds also came. I never had such collecting before and I didn't think there were so many bugs in the world. Another remarkable thing brought to my notice was the fact that there were no large numbers of any one species, but the crowds were made up of hundreds and thousands of different species. Of course, I picked out the fine things as I could only take care of a limited number. I picked out a couple of sample boxes of strange and curious and grotesque insects of various orders, and some of the things I got were strange and wonderful to behold, some of the giant forms of the Mantidæ and Phasmidæ are most peculiar looking creations! I couldn't begin to tell you all the great experiences, and wonderful things I saw in this marvelous country, but the trip was one that I will never regret and I expect in the next few years to visit South America again. I also saw one of the greatest waterfalls in the world, the great Kaieteur Falls of the Potaro River. It was a hard trip to get there. I had to go light as I could only get over the last 40 miles by moving without any collecting outfit or anything except just enough provisions to see me through. Very few white men have ever seen this big waterfall, only five prior to myself, I believe, and it entails a very hard trip. I got two Indians and a native canoe, or "woodskin", and started. It took us four days to cover the 40 miles as it was in bad rapids. It was well worth seeing, and I'll never forget as long as I live the first sight I got of this magnificent waterfall. It is 821 feet sheer drop from the plateau into a narrow gorge surrounded by giant forests and buried in this great tropical wilderness. It was the most majestic work of nature I have ever looked at. Niagara does not compare with it for grandeur and beauty.

On Scarites subterraneus Fabr. and varieties

By. Chas. Schaeffer, Brooklyn, N. Y.

Only one of the number of names proposed from time to time at the expense of *Scarites subterraneus* Fab. is recognized in our list, but judging from my material two more ought to be accepted. One of these, *californicus* Lec. is rather feebly differentiated from *subterraneus* Fab. but as it seems to be confined principally to the southwest, it ought to be recognized. The few specimens which I have seen are from Texas, Arizona, Southern California and Mexico, which, when placed alongside of specimens from the northeast certainly differ enough. The other, *Sc. lissopterus*, was described by Chaudoir from Dallas, Texas, as a variety of his *quadriceps* (*substriatus* Hald.). This variety appears to be known only from Texas and looks quite distinct by its perfectly flat, shining elytral intervals and finely punctured and scarcely impressed striæ.

The outer antennal joints in *substriatus* and var. *lissopterus* are relatively more elongated than those of *subterraneus* and this together with the much larger size, almost entitles *substriatus* to specific standing, therefore, if two more forms are admitted, the true relationship of all is better shown by placing *substriatus* as a subspecies of *subterraneus* and *lissopterus* as a variety of the former. Including the new addition mentioned below our species and varieties stand thus:

Scarites subterraneus Fab.
var. *californicus* Lec.
subsp. *substriatus* Hald.
var. *lissopterus* Chaud.
Scarites alternans Chaud.

Scarites subterraneus Fab. Mant. Ins. I. p. 206.

Our common, well known species is widely distributed occurring from the Atlantic to Pacific but absent from the southwest where it seems to be replaced by the var. *californicus* Lec.

It is about 16 - 19 mm. long; the elytral striæ are more or less deeply impressed, except the seventh, and the intervals rather convex; the tenth and the three or four preceding antennal joints are transverse, hardly as long as wide and in the majority of specimens the anterior tibiæ have laterally only one small tooth above the second, though specimens occur occasionally with two small teeth as in *substriatus* Hald. A specimen from northern California, which otherwise does not differ from typical *subterraneus* Fab., has two small teeth on one side and three on the other.

Scarites subterraneus var. *californicus* Lec.
Scarites californicus Lec. Ann. Lyc. Nat. Hist. vol. V, p. 198.
Scarites texanus Chaud., Ann. Soc. Ent. Belg. XXIII, 94.

Agrees with *subterraneus* Fab. in size, the transverse antennal joints and number of teeth on anterior tibiæ but has the elytral striæ feebly impressed and the intervals nearly flat. It occurs in Texas, (Chaud.) Southern California, Arizona, Lower California (Horn) and Mexico (Bates). I have seen specimens from all of these localities except Lower California.

Scarites subterraneus subsp. *substriatus* Hald.
Scarites substriatus Hald. Proc. Acad. Phil. vol. II, p. 54.
Scarites quadriceps Chaud. Bull. Nat. Mosc. 1843, p. 729.

This is much larger in size than *subterraneus* Fab. about 20-29 mm. long with the elytral striæ generally less deeply impressed and the intervals more or less convex, the antennal joints not transverse, but rather elongate and in the majority of specimens examined the anterior tibiæ have two and sometimes three small teeth above the second one. A large specimen from Texas has, however, only one small tooth. It seems to be fairly common in the Middle States.

Scarites subterraneus subsp. *substriatus* var. *lissopterus* Chaud.
Scarites quadriceps var. *lissopterus* Chaud. Ann. Soc. Ent. Belgique XXIII, 93.

The size and form of the antennal joints are as in *substriatus* Hald., but the elytral striæ are finely punctured and scarcely impressed and all the intervals are flat; the anterior tibiæ have, in the few specimens before me, two small teeth above the second one, though one specimen has three small teeth on one side and two on the other. It seems to occur only in Texas.

Scarites alternans Chaud.
Scarites alternans Chaud. Bull. Nat. Mosc. 1843, 727.

A specimen from Chokoloskee, Florida, in my collection agrees with the description of this Cuban species. It is as large as *substriatus* Hald. and differs principally from *subter-*

raneus and its different varieties by having all the elytral striæ exceedingly deeply impressed, including the seventh and all the intervals are very convex; the elytra are slightly narrowed toward base and the eyes are more prominent. In *subterraneus* and varieties the seventh elytral stria is rather feebly impressed and the seventh elytral interval at most feebly convex.

Proceedings of the Brooklyn Entomological Society

The regular monthly meeting of the Brooklyn Entomological Society was held at 55 Stuyvesant Ave., June 12, 1913, with 21 members present.

Notice has been sent to members, stating that, owing to the retirement from business of the American Entomological Society and Mr. George Franck, who has hospitably housed the Society for the past thirteen years, there must be considered the question of a future home. A letter from the Brooklyn Institute of Arts and Sciences was read, which offered to the Society a permanent home in the Science Room of the Institute, Academy of Music, or in the Central or Children's Museums. It was finally voted to hold the October meeting in the Children's Museum, the November meeting in the Science Room, and the December at the Central Museum. This arrangement, it was thought would enable members to learn their preferences. Meanwhile the Secretary was instructed to express the thanks of the Society for the generous offer of the Institute.

A Committee was appointed to draw up resolutions of thanks to Mr. George Franck, for his unceasing work in our behalf. During thirteen years his place of business has been our home and he personally has never missed a meeting. Beyond a doubt he has started more people on an entomological career than any man in the world.

Mr. Pasch exhibited his devise for keeping pupæ with a proper degree of moisture, which has reduced mortality most successfully. The pupæ are kept in an ordinary box with wire net cover. They are laid on the earth and covered lightly with moss. There is hung in the box a piece of patented preparation of terra cotta, which has been adopted by the United Cigar Stores for humidor lining. Each piece is about 18 by 6 by ¾ inches and is bound with zinc to prevent breakage. It absorbs water very freely and gives it out by evaporation very steadily in differing temperatures. Its cost is nominal.

Mr. Engelhardt exhibited a box of specimens of many orders collected by M. H. Mead, of Passaic, and mounted by a method invented by the latter which has many advantages. A vertical pin is thrust through a small cube of cork. A horizontal pin is elbowed at the large end and bent at the point to enter the thorax of the specimen from beneath. By turning the horizontal pin the specimen can be examined on both sides without removal from the box. For storage many specimens can be put on one vertical pin. There being more elasticity the danger of breakage from jar is greatly reduced. Pairs taken *in cop.*, etc., can readily be permanently placed together.

Mr. Mead has about 25,000 specimens of Lepidoptera, mostly collected at light near his house. Of these about 12,000 are mounted. They contain a number of species not recorded in the New Jersey list, which will be recorded as fast as possible in the Bulletin.

The regular meeting of the Brooklyn Entomological Society was held at the Children's Museum October 16, with 14 members and three visitors present.

The Treasurer reported cash on hand; $452.82 in Society accounts and $55.88 in Bulletin account. A proposition to allow to dealers a commission on subscriptions to the Bulletin was voted down.

There being no program, each member was in turn asked about his Summer's collecting. Mr. Olsen showed fine drawings of plant lice galls. Mr. Bather displayed 53 species of coleoptera taken by him on the Wading River expedition. It included *Ephalus latimanus*, taken on the beach, but the prize was a pair of *Apantesis excelsa* Neum., the male in excellent condition. Dr. Forbes, who had been sugaring with Engelhardt at Yaphank, showed series of rare moths. New to the Long Island records were *Glaea carinosa* (second record) and *tremula*, and *Rhynchagrotis placida.* Mr. Weeks related encountering a *Mutilla* preying on the larval cell of a wasp, with head so far buried in the cell that the creature could not extricate it before the cell was removed and placed in a collecting box. He also spoke of the voracity of some Carabidæ in confinement, eating all sorts of insects in all stages and tearing *Lachnosterna* adults in pieces. Mr. Grant showed some living *Coptocycla* from Florida, emphasizing their readiness to change color. Mr. Pasch showed a series of *Eglanterina shastaensis* which he had bred and of which he had kept all data of larval stages. Mr. Nicolay showed about 100 species of coleoptera, which included as Long Island records: *Fornax orchesides, Elater xanthomus, Clerus ichneumoneus, Acanthocinus obsoletus, Pachylobius picivorus;* and as rareties: *Alaus myops* from Albany, *Lomechusa cava* from Unadilla, *Geotrupes hornii* from Belport, L. I., *Sandalus niger* from the New Jersey Palisades, and *Strategus antaeus* from L. I. Mr. Dow mentioned the colony of *Pieris protodice* at Flatlands, L. I., as continuing numerically strong and finding *Catopsilia eubule* the commonest butterfly at Bayshore in September.

Mr. Wm. T. Davis gave an account of the Society's field excursion to Wading River over Decoration Day, showing photographs and exhibiting the following specimens: *Cleonus calandroides, Cremastochilus harrisi, Nicagus obscurus,* all found on the upbeach in some numbers, particularly the last two. *Meloe americanus* found walking across a road while on its back was perched the Anthicid beetle *Corphyra collaris. Eritettix carinatus* Scudd., a colony was found on a hill. The only other Long Island record is a ♀ collected at Yaphank, May 28, 1911. *Tridactylus* *terminalis* Uhler. A number of these small and active crickets were found on the damp, sandy shore of Deep Pond May 31. *Atta septentrionalis* McCook. Found on a sandy hill. A full report to be presented later.

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Members of the Society and their friends are informed that the Secretary keeps for their benefit a mileage book of the Long Island R. R.

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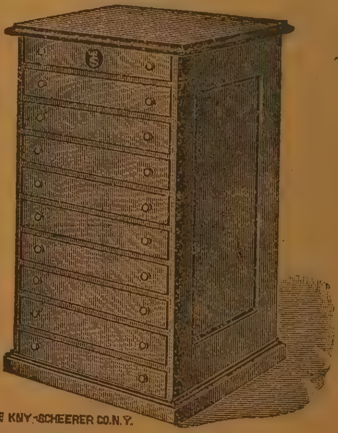
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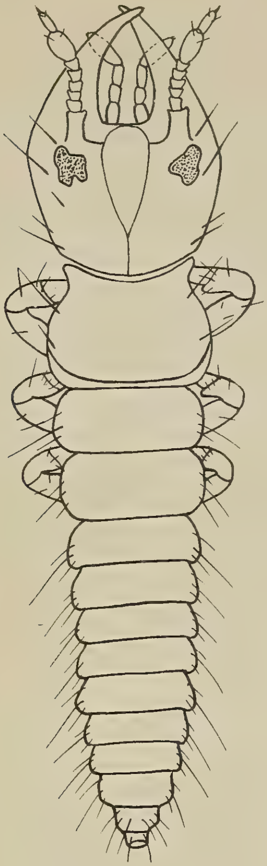

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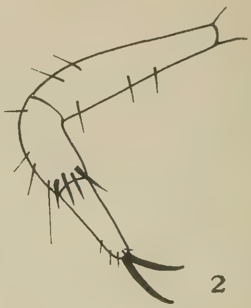

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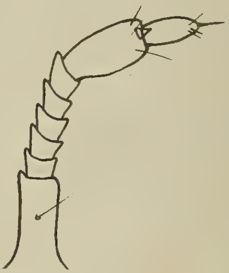

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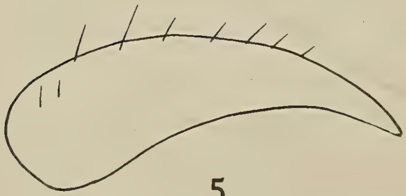

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WELCH— POLYSTOECHOTES PUNCTATUS

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The Early Stages of the Life History of Polystoechotes Punctatus Fabr.,*

BY PAUL S. WELCH

Department of Entomology, Kansas State Agricultural College.

The genus *Polystœchotes* contains the largest representatives of the Hemerobiidæ. Thus far only two species have been reported from North America, namely *P. punctatus*, Fabr. and *P. vittatus* Say. The latter appears to have been reported only from New Jersey and Pennsylvania, but the former is said (Banks, '05, p. 28) to occur "all over the northern half of our country and extending southward in the mountains, as into North Carolina, New Mexico and Arizona; more common in the northwest than elsewhere." *P. punctatus* is not only widely distributed but it also occurs in some localities in great numbers during certain parts of the summer, hence it seems strange that the immature stages of this attractive insect should remain unknown so long. The adult has been well known for many years, but information concerning the life history has apparently been lacking. The only account of this insect known to the writer which contains any data at all on any of the stages of the life history is that of Needham ('01, p. 551) in which the eggs are described as follows: "I obtained some of the eggs in July by confining some of the females of Polystœchotes in a pasteboard box. The eggs were dropped at random on the bottom of the box, where they rolled loosely about. They were chalky white in color, oblong oval in outline, with the surface minutely granular. Some were dropped on water in a glass, where they floated high and dry; and the next day were overgrown with molds. The others were left in the box, and the box closed that more eggs might be obtained; instead the females ate the eggs already laid, and then began to devour one another. Thus I lost an excellent opportunity for studying the earlier part of the life history of this interesting insect."

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*Contribution from the University of Michigan Biological Station No. 16.

Some interesting speculation on the larva and its habits appears in the literature. Hagen ('61, p. 206) wrote as follows: "Larva perhaps aquatic"; Needham gives the following suggestion: "The character of the eggs, and the haunts of the females lead me to suppose rather that the larva is terrestrial or arboreal, as in *Hemerobius;*" and Banks suggests the possibility of this larva being a parasite on some aquatic insect.

During the summers of 1911, 1912, and 1913, while a member of the staff of instruction of the University of Michigan Biological Station, located on Douglas Lake, in the extreme northern part of the southern peninsula of Michigan, the writer had an opportunity to make some observations on this interesting insect. The adults of *Polystœchotes punctatus* were very abundant during late July and the whole of August of the above mentioned years, and were sometimes attracted to light in great numbers. The abundance of adults indicated that this insect must be breeding in the immediate vicinity and the writer expended a considerable amount of energy in trying to discover this breeding place but all in vain. However, after a number of trials he was fortunate enough to secure the early stages of the life history. Lack of knowledge as to the food and food habits of the larva made a completion of the work impossible, and this partial account of the life history is offered with the hope that a description of the larva will help some one to recognize it in the field and to determine its food habits, thus making it possible to rear larvæ to naturity.

The Egg. (Pl. 0, Fig. 4). Eggs were secured by confining a number of females in a breeding cage. In most cases there was difficulty in obtaining eggs since the females either failed to deposit them in captivity or if eggs were deposited they suffered the fate described by Needham. Those which were finally secured were laid at night, and if this is the normal habit there is usually ample opportunity for the eggs to be devoured in the breeding cages before morning. The cannibalistic propensity of these insects was very evident, and examination of the cages often showed one or two large females and nothing but fragments of wings and legs of the other individuals which were put into the cage the night before. The same was likewise true of the cage in which the writer finally secured a number of eggs, but by good fortune the females evidently began devouring each other before eating the eggs.

The eggs were laid singly and scattered irregularly about on the glass bottom of the breeding cage. There was no evidence that the females attempted to seal the eggs to the supporting surface. No data was secured on the number of eggs deposited by a single female. The eggs are ovoid, chalk-white, and very finely granular in surface view, agreeing with the description given by Needham. This minutely granular appearance is not at all distinct, but requires high magnification to make it apparent. Measurements showed the eggs to be quite constant in size, the length varying only from 0.92 to 0.94 mm. and the width from 0.46 to 0.54 mm. The outer egg membrane is smooth and free from irregularities.

As the time of hatching approached the eggs changed color, gradually assuming a greenish hue which ultimately developed into a distinct green color a short time previous to the emergence of the larvæ. Eggs which were deposited August 1st hatched August 15th, thus making an egg period of fifteen days. All of the eggs under observation developed at the same rate and all hatched within a few hours of each other.

The Larva. (Pl. 0, Fig. 1). As mentioned above, the failure to discover the food and food habits of the larva made the study of the later stages impossible and the following description pertains only to stage 1.

The larva as a whole is somewhat brownish in appearace. With the exception of the two black eye spots, the head is of a dark yellowish color. The thorax is uniformly light brown, and the legs are translucent. The abdomen is brown, showing more of the color than the thorax, and has a light stripe which extends lengthwise on the mid dorsal surface. Newly hatched larvæ varied from 1.32 to 1.5 mm. in length. They are elongate, somewhat flattened dorso-ventrally, and taper gradually caudad. The maximum width of the body is near the middle of the head. The three main divisions of the body are well marked.

The head, which is the most prominent part of the body, is strongly chitinized and wider than the adjacent thoracic segment. It is ovoid in outline, having a length of about 0.53 mm. from the base to the tips of the mandibles and a maximum width in the region of the bases of the mandibles of approximately 0.35 mm. A pair of black, irregularly shaped eye spots are present on the dorsal aspect just caudad of the bases of the antennæ. The most striking feature of the head is the pair of curved, strong mandibles (Figs. 1 and 5) which extend far beyond the anterior margin of the head. The tips are bent mesad and each bears on the distal part of the inner margin several very small tooth-like projections. Each also bears a number of bristles on its outer margin. The antennæ (Figs. 1 and 3) are borne on the dorsal aspect of the head and attached immediately above the bases of the mandibles. Each is composed of eight segments as follows: a strong, cylindrical, basal segment is followed by five similar narrow segments which are closely set together; the penultimate segment is elliptical in outline, distinctly larger and broader than the adjacent ones, and bears two or three bristles on its distal crown; the ultimate segment is cylindrical and approximately as long as the penultimate segment, but the diameter is much smaller. It also bears several bristles on its distal crown and is terminated by a strong spine which is approximately half as long as the segment. Figure 3 shows the structural details and the characteristic shape of the antenna. On the ventral side of the head the gulo-mental region is slightly depressed below the level of the genas. From this side of the head is best seen the rather prominent pair of palpi, apparently the maxillary palpi, which extends cephalad almost to the tips of the mandibles. Each is composed of five segments, the distal one of which bears a number of short, stout spines. The middle segments also bear two or three long bristles. The head as a whole bears on the dorsal and ventral surfaces scattering bristles.

The length of the thorax averages about 0.50 mm. and the greatest width about 0.30 mm. The thoracic segments are distinct, smooth, rather strongly chitinized, and separated by broad intersegmental grooves. The prothorax exceeds the others in size, having a length almost equal to that of the combined length of the mesa- and metathorax. The prothorax and the mesothorax each have two pairs of well developed bristles on the lateral margins, but the metathorax apparently bears only one pair. The three pairs of similar, translucent legs (Fig. 2) are of approximately equal development and constitute efficient organs of locomotion. They are from one and one-third to one and one-half times as long as the width of the thorax and bear a number of spines and bristles. The single terminal tarsal joint of each leg bears two well developed, divergent, slightly curved claws.

The ten abdominal segments, with the exception of the last two, are all similar in shape and structure, but show a slight diminution in width toward the posterior end. The intersegmental grooves are broad and distinct. Each segment bears a number of bristles of different lengths, some rather long, others short. The two caudal segments are much smaller than the preceding ones. The terminal segment bears two long bristles; the penultimate bears at least four pairs of bristles one of which is rather long. Each of the other segments bears one pair of long, conspicuous bristles and several shorter ones.

The larvæ were very active from the moment of hatching and apparently began foraging for food immediately. Unfortunately none of them lived many days, due, no doubt, to the fact that the proper food could not be supplied. The active habits of the larva and the strongly developed mandibles are suggestive of the possible food habits of this form. It seems safe to call this a predaceous larva of terrestrial habit, or possibly of arboreal habit as suggested by Needham. It is possible that the eggs may be laid on the leaves of vegetation as in the case of *Chauliodes*, and on hatching the young larvæ may subsist on the small plant lice or other delicate insect life which may occur on the supporting plant. It is the hope of the writer that the above description of the egg and the larva, together with whatever may be suggested as to food habits, will make it possible for some one to complete the long sought for life history of this interesting insect.

LITERATURE QUOTED:

Banks, N. 1905. A Revision of the Nearctic Hemerobiidæ. Trans. Am. Ent. Soc. 32:21–51.

Hagen, H. 1861. Synopsis of the Neuroptera of North America. Smithsonian Miscellaneous Collections, 4:1–347.

Needham, J. G. 1901. Aquatic Insects in the Adirondacks. New York State Mus. Bull. 47, p. 551.

EXPLANATION OF PLATE I:

Fig. 1. Dorsal view of larva of *Polystœchotes punctatus* drawn from recently hatched specimen.
Fig. 2. Third leg of larva.
Fig. 3. Dorsal view of right larval antenna.
Fig. 4. Outline drawing of egg.
Fig. 5. Dorsal view of left mandible of larva.

The Early French Coleopterists.

By R. P. Dow, Brooklyn, N. Y.

It does not follow that, because scientific France accepted at once the "System of Nature" of Linné, French study of zoological classification was begun through the influence of that master. European revival of learning first traveled from Italy to France. The study of insects kept pace with all other branches. A volume of Aristotle in Latin, "De Animalibus," was published in Paris in 1548. The very fact that it is not particularly rare in old book stores proves that the edition was not small and that the readers were many. A number of editions of Pliny's Natural History were in print a few decades earlier or later. Entomology, as a distinct subject, had been taught in the Arab Universities as early as 1300, and at a number of European Universities by 1650. The forerunners of the idea of a natural classification were busy by the middle of the Seventeenth Century. The first great work on the subject was by Johann Swammerdamm, an Amsterdam physician, a General History of Insects, with forty-three plates of excellent drawings, published in 1669 when the author was thirty-two years old. There are no less than nine editions of this work, in Latin, French, German, Dutch and English. It was republished in Paris in 1758. Moreover it created a school at Amsterdam, from which Réaumur, Ray and Linné himself got their early lessons and from the publications of which Linné described many species, especially of Dutch West Indian material.

The posthumous volume of John Ray (*sic* on the title page; spelled Wray in most documents), a work of 415 small quarto pages published in London, 1710, traveled far and fast. It contained a rough classification of insects, differing mainly from the modern in the inclusion of the Crustacea. Latreille himself never wholly abandoned the idea of a close connection between the two groups. Ray estimated that there were 20,000 kinds of insects. An early master, a Frenchman born in 1683, Réné A. F. de Réaumur, published a number of research works in the Memoirs of the Academy of Sciences. His great work appeared in parts 1734 to 1742 from the Imprimerie Royale, "Memoires Pour Servir à l' Histoire des Insectes," seven quarto volumes with thousands of exact anatomical drawings. A few years later the work was reprinted in Amsterdam in twelve small octavo volumes. This edition was so large that it is now no rarity. A set comes frequently into the market for less than half the cost of publication. No better proof of its importance need be adduced than the fact that it was still used as a text book in 1812.

All these works inspired Linné and equally Etienne Louis Geoffroy, who was born in Paris, 1727.

If Linné is the "Father of Natural History," this man should be known as the "Father of Entomology," and to him belong by right many of the honors worn by Fabricius. Nevertheless his place in the Hall of Fame has become appreciated only during the last forty years. Previously his genera had been ignored or overridden.

The name is a famous one in French science. An uncle, Etienne Francois Geoffroy, wrote a volume of 472 pages of text and 729 plates on the medicinal properties of 719 plants and 134 animals. This work, published posthumously in 1767, was the first great materia medica. His younger brother, Claude Joseph, had a famous collection of natural curiosities and wrote treatises on them. The famous Etienne Geoffroy Saint-Hilaire, (1772–1844) professor of Zoology in the Jardin des Plantes, is either of a different family altogether, or of kin too remote to trace. His son, Isadore, was a physician and writer on medical entomology, (1805–1861).

E. L. Geoffroy was a physician, a man of means and even political prominence, as is attested by the fact that he incurred the displeasure of Robespierre. Moreover he was a well equipped entomologist at as early a date as Linné. The tenth edition of Linné's work, in which the present binomial nomenclature is distinctly adopted for the first time, appeared in 1758. The first edition of Geoffroy's "History of Insects Occurring around Paris" came out in 1762. He displayed, in the words of G. R. Crotch, "a degree of acumen far in advance of his age," an opinion heartily concurred in by Leconte. That the same opinion was shared by Linné himself is evidenced by his jealousy expressed in his twelfth edition, 1766–7. This much is certain—Geoffroy made a great step forward in his conception of the nature of a genus. He divides the beetles into fifty-two genera, and these do not depart very far from present family or tribal divisions.

By the fiat of a British Association in 1842 that priority in nomenclature could not antedate 1766 (i. e., the date of Linné's 12th edition) those who accepted it were compelled to discard the generic names of Geoffroy, except in cases where they had not been used by others before an edition of Insects around Paris published in 1799. The check-list of coleoptera compiled by Crotch in 1873 restored the Geoffroy names generally. This act was opposed by J. L. Leconte, who had his own peculiar ideas on the laws governing nomenclature and who, also, (there is good evidence for believing) was a little jealous of the brilliant scholar from Cambridge. A masterly analysis of the Geoffroy genera was published by Leconte in the Canadian Entomologist, vol. VI., pp. 186-196. Without regard to any actual or imaginary law, there exists a feeling in favor of fair play, that any inventor or discoverer has rights in the product of his mind, of which he should not be deprived. The Geoffroy names have passed beyond scientific nomenclature. They include many of the best known of all beetle names and are incorporated firmly in the common usage of most European languages, from which no arbitrary rule can ever dislodge them.

Out of the 52 genera of Geoffroy the following were recognized from Linné, either invented by or drawn from classic sources by the latter: *Scarabæus*, *Attelabus*, *Dermestes*, *Elater*, *Buprestis* (a name in use a century before Aristotle), *Cicindela*, *Dytiscus* (corrected to *Dyticus* by Geoffroy), *Cerambyx*, *Chrysomela*, *Cassida*, *Coccinella*, *Cantharis*, *Tenebrio*, *Mordella*, *Staphylinus*, *Necydalis*, and *Meloe*. The names still credited to Geoffroy are: *Platycerus*, *Ptilinus*, *Copris*, *Anthrenus*, *Lampyris*, *Omalisus*, *Hydrophilus*, *Melolontha*, *Prionus*, *Luperus*, *Cryptocephalus*, *Crioceris*, *Altica* (no apparent reason for the accepted spelling *Haltica*), *Galleruca*, *Mylabris*, *Bostrichus*, *Clerus* (used by Aristotle), *Anthribus*, *Scolytus*, *Anaspis*, *Diaperis*, *Pyrochroa*, *Notoxus*, *Cerocoma*. The remainder, names invented by Geoffroy and credited to others who used them for the first time after 1766: *Byrrhus* Linn., *Cistela* Fabr. (applied to Byrrhidæ), *Peltis* Illiger (included the genus *Silpha*), *Cucujus* Fabr. (applied to Buprestids), *Bruchus* Linn. (applied to Ptinids), *Gyrinus* Linn., *Leptura* Serv., *Rhinomacer* Fabr. (equals the present *Attelabus*. *Attelabus*, as Geoffroy used the word, covered *Hister*), and *Tritoma* Fabr.

Geoffroy's work consisted of 1,215 quarto pages and depended upon public support. This was not lacking for there came two succeeding editions. Nevertheless it was twenty years before what might be called a school existed, and that by the friendship of a younger generation—notably Fourcroy, Olivier and Latreille—with the elderly master. The greatest work of Fabricius followed Geoffroy by about eleven years. Olivier reached his prime about fourteen years later still. Another period of not less than twelve years elapsed before Latreille reached his zenith, doubling and more the genera of beetles. Fourcroy, Professor of Chemistry, published his own catalogue of beetles found around Paris in 1785. It added nearly 300 new species. Some being cosmopolitan, his name appears in the American check-list.

A. G. Olivier, a professor of zoology, depended, like his two predecessors, on public support for his great work—devoted to beetles alone—the six volumes of text and two of plates of which were published from 1789 to 1808. This work increased the coleopterous genera to 100. Latreille's Natural History was published in fourteen volumes from 1802 to 1805. This again multiplied genera. For example, Scarabæus was divided by him into nine genera. Latreille has a total of 98 genera and one species in our check list.

A common meeting place for these fellow workers existed only at times. Geoffroy kept open house until 1790, but, having incurred the displeasure of the Commune, he retired to Chartreuse, where he lived in retirement until his death in 1810. Having a Professorship with a State foundation, Olivier retained his income through all political castastrophes, and from 1800 until his death in 1814 sheltered poor Latreille, who otherwise might have had occasional difficulty in escaping starvation. Fabricius, when in Paris, always dated letters from the house of Olivier.

That greatest of human overturns which drove Geoffroy to the refuge of a monastery and sent Latreille on the way to transportation for life lifted into wealth and fame another coleopterist, fully as well known as his predecessors, although of almost opposite mould of character and not to be classed as a scholar of the same calibre.

Auguste Dejean was born at Amiens in 1780, of a respectable family, but not one of wealth or nobility. As a lad he found a companion in Duméril, who was six years his senior and who became one of the best known entomologists of France. Together they collected butterflies. Duponchel spent a summer with them and the three became lifelong friends. Dejean was then 13 years old, Duponchel and Duméril of an age. A few months later Dejean abandoned butterflies for beetles and never gave up the hobby a day in his whole life.

Fate plays strange tricks. Two years later Dejean was carrying a musket of the republic. He was "citizen Dejean" then. In 1802 the Army of the North returned to Paris on a brief furlough. Here Dejean made arrangements to preserve the collection he had already acquired and here he met Olivier, Latreille, Duboscq and many others. At this time he had printed for private distribution a catalogue of his collection, 910 species of beetles, of which 50 were exotic.

Thirty-five years later, when Dejean was in the height of his glory, he found a hundred or so copies of this pamphlet and distributed them at a meeting of the Entomological Society. About 20 copies are known to be extant.

For the next thirteen years the career of this soldier of fortune is the romance of all the successful supporters of Napoleon. Never away from the field, save for the respite of the Emperor's exile at Elba, he stood at Waterloo, general of a division and Aide de Camp to Napoleon. He had acquired both riches and power, as did all the generals who gave their best to the short lived dynasty.

Yet this madcap general never ceased to be a coleopterist, never spent an hour without a collecting bottle in his holster. His soldiers called him the French equivalent of the "bughouse general." The specimens caught on the field of battle were posted to Paris and kept by his faithful *agent d'affaires*. At the battle of Alcanizas, which he personally won, while actually under fire he spied a *Cebrio undulatus* on a flower. Dismounting he bottled it. An hour later a stray ball shattered his holster, breaking the bottle. Dismounting again, he searched until the beetle was recovered. This specimen held the place of honor in his collection until it was dispersed. He had in his collection a number of specimens labelled Quatre Bras and Waterloo.

Waterloo was not only Waterloo to the Emperor but to all the generals of his adherents. Dejean found himself proscribed and a price on his head. His property, however, was safe, hidden with trustworthy friends. This was the time to take a vacation and he did so. The Court of Austria was open to him. For three years he collected through the Balkans as far as Austria held dominion. Political disabilities were removed in 1818 and he returned to Paris. For the rest of his life he was rich and respected. In 1821 he published another catalogue of his beetles, numbering 6,692. This was rather more than the total number described from Europe, but this is not surprising. When Henshaw's check-list was published in 1885 it contained 9,238 species, while the Leconte collection had about 1,100. There were merely more species to name. In 1828 he received a long visit from Major Leconte. As Dejean writes in a preface, this gentleman gave him American species with a "rare generosity." As a matter of fact Leconte gave him nearly 800 species. Eschscholtz had visited him and gave him cotypes of all he could spare from his own and Chamisso's collections. He was now Baron Dejean. He financed a n mber of collecting expeditions. It was at his expense that Lebas and a party of six visited the United States of Columbia. Lebas stayed there five years, picking up small beetles. "Most of these," observes Dejean, "are new to science." Bonpland, for years a captive in Paraguay, gave him specimens. Desjardins himself was envoy from Dejean to Mauritius. In 1822 he became the titular patron of Latreille, an arrangement which lasted for nine years, until the latter was elected Curator in Chief of the Museum. In 1826 he gave to Latreille his Lepidoptera and what he had in all other orders except Coleoptera, but as there was already talk of a Museum position for Latreille, Dejean bought them all back again, and with them all the beetles which Latreille had. This accession added 1,700 species to Dejean's collection, which now numbered 20,000 species of beetles and an enormous aggregate of other orders. An entire year was devoted to cataloguing and describing the Latreille beetles. Dejean's next catalogue came out in 1836. Fortune had dealt kindly with him. He was now Count Dejean, Peer and Councillor of France. It is of more consequence that he had 20,909 species of beetles, exclusive of the mass of unworked material. The last enumeration was published in 1837, 22,399 species. There are few larger private collections today, and it must be remembered that the number of described beetles was then less than half what it is now. Beyond a doubt his is the most famous collection in the world.

Dejean conceived a greater project. Stephens' British Entomology, with its wonderful plates, had not then appeared. Germar, in Germany, had just begun to publish fine colored plates. The great work was that of Panzer, 1790, with over 2,200 colored plates, touching all orders. It was Dejean's idea to create a work in which every species known in the world should be covered in text and illustration. Dr. J. A. Boisduval, with his old friends Duponchel and Duméril, were to handle the Lepidoptera. Latreille was to handle the major classification and the generalities. It was estimated that the whole work could be produced at a cost of a million francs. It was due mainly to Latreille that the work was not done, for Latreille was the one scholar who realized the task was too great for any one combination of brains and the one worker in the ranks who threw away the promise of money for the preferable adherence to scientific truth. One volume appeared from Dejean himself, the Species General of 1825, it covered his Carabidæ and is his best monument today. (To be concluded.)

Lepidoptera.—Mr. Edward D. Keith, of Providence, R. I., reports among species taken last summer rare in that locality *Pieris protodice* ovipositing on pepper grass, *Pamphila philæus*, *Polychrysia formosa*, *Autographa oxygramma*, and *Autographa verruca*.

New Neuroptera from the United States.

By Rev. Longinos Navas, S. J., Zaragoza, Spain

Two sentences of a letter from my friend, Mr. J. R. de la Torre Bueno, dated October 19th last, have led me to write this paper and send it to America. He said, in regard to the Brooklyn Bulletin: "I trust that from time to time when you have any paper on material I may have sent you, you will kindly favor us with it. . . . It is our wish to make this publication one of the best in the United States." I at once looked up the Neuroptera from the United States I was working on, and I have prepared these notes which I send on with pleasure to help in the good intentions of Mr. de la Torre Bueno. If I should have the happiness of a good reception on the other side of the Atlantic, it would be the best of incentives for more work.

Family MYRMELEONIDÆ: 1. *Mastega* gen. nov.

Similis *Cryptoleoni* Banks.

Antennæ thorace haud longiores, clava forti. Prothorax transversus.

Abdomen ala posteriore brevius, saltem in ♀.

Pedes fortis, tibiis I, II femoribus I, II brevioribus, tibiis posticis femoribus paulo longioribus; calcaribus nullis; tarsis articulis primo et quinto longis, quinto longiore, intermediis brevibus.

Alæ linea plicata manifesta; area costali angusta, venulis plerisque simplicibus, aliquot furcatis; area radiali paucis venulis internis.

Ala anterior area costali paucissimis venulis gradatis ante stigma; area apicali duplici serie venularum gradatarum; area cubitali partim biareolata.

Ala posterior area costali venulis nullis gradatis; area apicali serie venularum gradatarum, ramo obliquo cubiti parallelo postcubito; area postcubitali simplici, angusta.

The following species is the type,

On comparison with *Cryptoleon nebulosus* Oliv., type of the genus *Cryptoleon* Banks, it is evident that it cannot be included in the same genus. *Cryptoleon* can be readily differentiated from this genus by the wing structure. The costal area has many gradiform veinlets in both wings, in the anterior wing nearly in its entire length. The apical area has only one series of gradiform veinlets in both wings.

2. *Mastega texanus* sp. nov.

Flavus, fusco varius.

Caput (fig. 1) flavum, macula inter et pone antennas, ante antennas in lineam lateralem transversam producta, fusca; vertice et occipite linea media longitudinali fusca; oculis fuscis; palpis flavis, labialium articulo ultimo fusiformi, externe fusco notato; antennis fuscis, flavo angustissime annulatis, clava forti, inferne rufescente.

Prothorax transversus, flavus, pilis lateralibus fuscis, fascia centrali longitudinali in metazona dilatata longitudinaliter divisa, fusca (fig. 1). Mesonotum flavum, proscuto fusco, linea longitudinali media flava, fascia laterali fusca juxta alas. Metanotum flavum, fascia laterali fusca. Pleuræ flavæ, duplici linea longitudinali fusca.

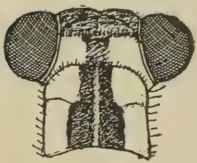


Fig. 1.
Mastega texanus Nav.
Head and Prothorax
(Vienna Mus.)

Abdomen flavidum, fusco pilosum.

Pedes flavi, fusco punctati et setosi, apice tibiarum et articulorum tarsorum fusco; tarsorum articulis primo et quinto longis, quinto longiore.

Alæ apice subacutæ, hyalinæ, reticulatione subtota fusca, venis albido striatis; plerisque venulis et axillis furcularum angustissime fusco limbatis; linea plicata manifesta stigmate flavo citrino.

Ala anterior area costali venulis plerisque simplicibus, aliquot ante stigma furcatis, paucissimis venulis gradatis (1-2) ante stigma; area apicali duplici serie venularum gradatarum; area radiali 3 venulis inermis, aliqua cellula divisa sectore radii fere 8 ramis; area cubitali ante ramum obliquum subtota biareolata, ramo aperto; area postcubitali basi biareolata.

Ala posterior area apicali una serie venularum gradatarum; area radiali 2 venulis internis, sectore radii 7 ramis; areas cubitali et postcubitali angustis, simplicibus; ramo obliquo cubiti parallelo postcubito.

Long. corp. ♀ 23 mm.; long. al. ant. 21 mm.; long. al. post. 20 mm.

Habitat.—Texas, Boll, 1875. One example in the Vienna Museum labelled by Brauer *abdominalis?*

Family HEMEROBIIDÆ: 3. *Sympherobius tristis* sp. nov.

Similis *angusto* Banks.

Caput et thorax picei. Abdomen deest.

Antennæ piceæ, pilosæ, longæ, apicem versus attenuatæ. Facies testaceo-fusca, macula in media nigra. Oculi fusci. Palpi nigri.

Pedes fusci.

Alæ apice ellipticæ, ad medium modice dilatatæ, membrana iridea; reticulatione subtota fusca; stigmate fuscecente, elongato, manifesto.

Ala anterior (fig. 2) venis fuscis albido punctatis; cubito subtoto, axillari partim fusco marginatis; venulis omnibus fuscis; membrana tota fusco marmorata, excepta basi et area costali. Area costalis angusta, venulis plerisque furcatis, venula recurrente basilari cellulam oblongam angustam claudente. Radius duobus sectoribus. Venulæ discalis fusco marginatæ.

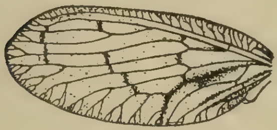


Fig. 2.
Sympherobius tristis Nav.
Anterior Wing X5
(Col. m.)

Ala posterior immaculata, ad marginem externum et posticum levissime fusco umbrata; 2 venulis discalibus.

Long. al. ant. 7 mm.; long. al. post. 6 mm.

Habitat.—Pecos, New Mexico, July 13. One example which I found in my collection sent by Mr Banks with the foregoing locality and with the name (in my handwriting). *Micromus variolosus* Hag. so identified by Mr. Banks when he sent it to me. The narrowness of the costal area of the anterior wing gives it a certain likeness to a *Micromus*, but it is a true *Sym-*

pherobius. Banks in citing *Micromus variolosus* Hag. (Trans. Am. Ent. Soc., 1905, p. 46) gives as localities "Pecos and Mesilla, New Mexico," among others.

4. *Micromus nesoticus* sp. nov.

Similis *subantico* Walk.

Caput facie palpisque piceis, fronte medio ferruginea, ad latus ante antennas macula triangulari testacea; vertice testaceo longitudinaliter tricarinato, duabus maculis fuscis; oculis fuscis; antennis testaceis, longis.

Thorax fuscus.

Abdomen fuscum, apice testaceum.

Alæ angustæ, ellipticæ, reticulatione fusca, testaceo varia; stigmate indistincto; cellulis discalibus elongatis, hexagonalibus.

Ala anterior (fig. 3) membrana striolis longitudinalibus fuscescentibus singulis inter venas; venis fuscis, testaceo late interruptis, vel potius testaceis, fusco punctatis aut striatis; area costali venulis plerisque furcatis; venulis gradatis fuscis, externis fusco limbatis.

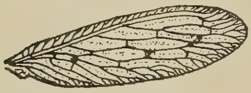


Fig. 3.
Micromus nesoticus Nav.
Anterior Wing X5
(Col. m.)

Ala posterior hyalina, reticulatione uniformi, forti, fusca, ad regionem stigmatis testacea.

Long. corp. 3.8 mm.; long. al. ant. 6.5 mm.; long. al. post. 4.8 mm.

Habitat.—Yaphank, Long Island, N. Y., 26. IX. 12 (de la Torre Bueno).

In general appearance like *subanticus* Walk. It is darker, the wings are narrower and longer, the reticulation darker; in the forewing there are only three radial sectors, in place of four as in *subanticus*.

Family CONIOPTERYGIDÆ: 5. *Conwentzia angulata* sp. nov.

Corpus totum nigrum, exudatione alba.

Antennæ fuscæ.

Pedes fortes, femoribus fuscis, tibiis leviter dilatatis, compressis, pallidioribus; tarsis articulo primo longo, ceteris brevibus.

Alæ (fig. 4) membrana grisea vel leviter infumata; reticulatione forti, fusca.

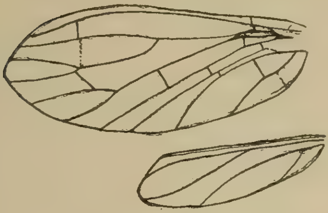


Fig. 4.
Conwentzia angulata Nav.
Wings
(Col. m.)

Ala anterior stria albida longitudinali ante procubitum, ab ortu usque ad furcam apicalem; venula radiali alba; area costali angusta ad basim latiore, una venula distincta prope basim; sectore radii furcato; venula radiali fere cum subcostali continuata, ad petiolum furcæ juxta hujus axillam inserta; venula intermedia obliqua, introrsum inclinata, intra furcam procubiti inserta, ab ipsa furca sectoris radii prope axillam procedente; 2 venulis procubitalibus, externa duas tertias partes a prima ad furcam procubiti inserta; item 2 venulis cubitalibus, externa intra venulas primam et secundam procubitales inserta.

Ala posterior brevior, angusta, margine antico recto, ante apicem in angulum obtusum flexo; venis usque ad marginem extensis; sectore radii simplici, nulla venula radiali visibili.

Long. corp. 2 mm.; long. al. ant. 2.8 mm.; long. al. post. 1.4 mm.

Habitat.—White Plains, N. Y., one example; another from Westfield, N. J., 31.VIII. 4 (de la Torre Bueno).

6. *Conwentzia axillata* sp. nov.

Totum corpus nigrum, albo copiose exudatum.

Antennæ testaceæ, fere 34 articulis, pilosæ.

Palpi testacei, graciles.

Pedes longi, tibiis distincte longioribus quam femoribus.

Alæ (fig. 5) albæ, cinereo leviter suffusæ; reticulatione cinerea.

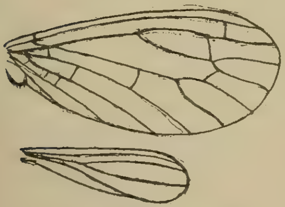


Fig. 5.
Conwentzia axillata Nav.
Wings
(Col. m.)

Ala anterior venula radiali ante venulam subcostalem antice, ante furcam sectoris postice manifeste inserta; venula intermedia obliqua, intra furcam sectoris antice prope axillam, intra furcam procubiti postice longe ab axilla inserta; 2 procubitalibus, externa longe a furca distante; 2 cubitalibus, externa intra primam et secundam procubitalem, propius ad primam seu internam accedente; axilla in lobum rotundatum prominente.

Ala posterior abdomen longius excedens, angusta, apice late rotundato, obtusa; venis ad marginem pervenientibus; secunda vena furcata, furca longissima, fere triplo longiore quam petiolo.

Long. corp. 1.5 mm.; long. al. ant. 3.3 mm.; long. al. post. 1.5 mm.

Habitat.—White Plains, N. Y. (Bueno.)

Dr. Navas has described in addition five species of Neuroptera collected by Mr. J. R. de la Torre Bueno, locally, descriptions of which follow, as they appeared in comparatively inaccessible foreign publications. (Eds.)

Family HEMEROBIIDÆ: *Lomamyia nearctica* sp. nov.

Similis *texanæ* Banks.

Caput testaceo-flavum; vertice puncto juxta oculos et atomis minutissimis, fuscis, pilis fuscis hirto; oculis plumbeis; antennis flavis, flavo pilosis, articulo primo elongato, aliquot atomis et pilis fuscis; occipite linea media longitudinali fusca.

Thorax testaceus, superne, fusco punctatissimus, interne fusco maculatus; pilis fuscis albisque. Prothorax paulo latior postice quam longior, antrorsum angustatus. Metanotum fusco maculatum, haud punctatum.

Abdomen fuscum, pilis griseis; cercis cylidricis, longis, ad apicem leviter incrassatis, fusco longiter pilosis.

Pedes pallidi, fusco punctatissimi, fusco et albido pilosi; tarsis pallidis, apice articulorum fusco.

Alæ post medium dilatatæ, margine externo concavo; membrana partim fuscata; stigmate flavo-rufescente, interne fusco limitato.

Ala anterior margine externo excavato et sinuato ; venis testaceis, fusco punctatissimis; venulis discalibus fuscis; membrana maculis striisve ferrugineis transversis, ad medium rarioribus, in tertio posteriore et apicali densioribus et in area apicali in limbum coalescentibus; area costali venulis furcatis aut ramosis testaceis, fusco punctatis, ad costam aliquot maculis fuscis; venulis discalibus et axillis furcularum anguste fusco limbatis.

Ala posterior pallidior, reticulatione fulva, dense pilosa;

venula secunda radiali (pone stigma) et tribus gradatis fuscis fuscoque limbatis; membrana in tertio apicali subfusco leviter suffusa.

Long. corp. 7 mm.; long. al. ant. 11 mm.; long. al. post. 10 mm.

Habitat.—United States. Yaphank, L. I., 23 Sept. 1912. De la Torre Bueno. (My collection.)

Family CHRYSOPIDÆ: *Chrysopa rubicunda* sp. nov.

Viridi-flava.

Caput totum rubellum; oculis in sicco fuscis; antennis flavis primo articulo rubello.

Prothorax latior quam longior, antrorsum parum angustatus.

Abdomen . . . deest.

Pedes pallidi, tarsis rufescentibus, unguibus nigris.

Alæ angustæ, longæ, hyalinæ; apice acutæ; reticulatione flavo-viridi; stigmate pallido, vix sensibili.

Ala anterior venulis costalibus initio et fine, radialibus et procubitalibus subtotis, gradatis 6-7 et tribus primis cubitalibus totis; ramis sectoris, sectore et venulis postcubitalibus initio nigris; procubito stria ante cellulam procubitalem typicam fusco striato; cellula procubitali typica ultra venulam primam intermediam nigram producta.

Ala posterior venulis gradatis 5-7 et ultima cubitali totis, costalibus et radialibus initio et fine nigris.

Long. al. ant. 12.5 mm.; long. al. post. 11.2 mm.; Lat. al. ant. 2.3 mm.

Habitat.—United States: Yaphank, L. I., Sept. 23, 1911. De la Torre Bueno. (My collection.)

The above two species were described in Entomologischen Zeitschrift, Jahrg. XXVII, No. 4.

Family CONIOPTERYGIDÆ: *Malacomyza ventralis* sp. nov.

Similis *fitchi* Banks.

Caput fuscum; oculis in sicco nigris; antennis testaceis, 30 aut pluribus articulis; palpis testaceis.

In the example before me it seems to me there are 32 joints.

Thorax fuscus, latus.

Abdomen aurantiacum, vel vitellinum, ovale.

Pedes fusco-testacei.

Alæ (figured) membrana grisea, stria albida longitudinali in area intermedia seu ante procubitum; reticulatione fusco-pallida, forti; furca sectoris longiore suo scapo, venula cum radio et procubito connexa.

Ala anterior venula intermedia intra furcam procubiti desinente; duabus venulis procubitalibus, externa perpendiculari procubito ante hujus furcam, interna basilari; duabus cubitalibus in tertio alæ interno.

Ala posterior venulis radiali et intermedia intra furcam desinentibus.

Long. corp. 1.7 mm.; long. al. ant. 2.4 mm.; long. al. post 2 mm.

Habitat.—United States: White Plains, N. Y., June, 1910. De la Torre Bueno. (My collection.)

Family HEMEROBIIDÆ: *Sympherobius buenoi* sp. nov.

Similis *umbrato* Banks.

Caput, thorax, abdomen nigra, nigro pilosa.

Caput nitens, læve, oculis nigris; antennis fuscis; palpis fuscis, ultimo articulo labialium pallidiore, grandi, elongato, mucrone tenui.

Abdomen ultimo segmento superne fusco-testaceo.

Pedes pallidi, fusco-pilosi; tarsis longis; primo articulo duplo longiore quam secundo.

Alae (figured) reticulatione forti, tota nigra, apice elliptice rotundato.

Ala anterior membrana tota fusco tincta, in area costali continenter, in disco punctatim, densius juxta venas, obscurius juxta maculas gradatas et inter ramos cubiti, quasi striam obliquam fuscam simulante.

Ala posterior leviter fumosa, venis omnibus fusco limbatis.

Long. corp. 2.7 mm.; long. al. ant. 4 mm.; long. al. post. 3.5 mm.

Habitat.—United States: White Plains, N. Y., 11 June, 1910, one example, collected and sent me by Mr. J. R. de la Torre Bueno, to whom I have the pleasure of dedicating the species.

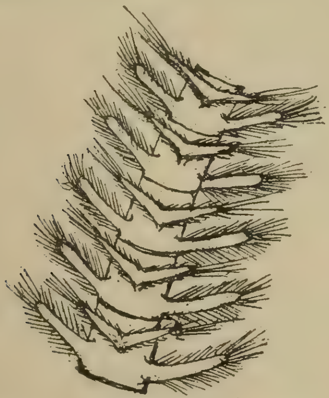
The two preceding descriptions appeared in Broteria, ser. zool., vol. X, 1912 and vol. XI, 1913, pp. 198-199.

Short Studies in Geometridae: No. 2.

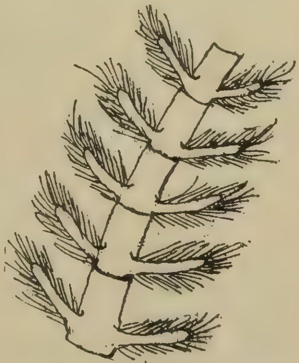
By Richard F. Pearsall, Brooklyn, N. Y.

Petrophora fluctuata, Linn.—This study was undertaken to remove some doubts caused by a suggestion of one of my foreign correspondents that some of our western species, so called, were only overgrown forms, or races, of well known eastern types. In the Canadian Entomologist, vol. 38, p. 400, the Rev. Geo. W. Taylor separates two western species, theretofore confused with *fluctuata*, under the names of *pontiaria* and *fossaria*. The former, of which I have a number of specimens, is not so very unlike a larger, coarser replica of our eastern form. The latter I do not know. Two years later, (Can. Ent. vol. 40, p. 59) he separates our eastern species under the name of *planata*, overlooking Guénée's previous name of *iduata*, to which Dr. Dyar has called attention (Proc. Ent. Soc. of Wash., vol. 10, p. 33). He compares it with *fluctuata*, relying upon color differences and the direction of the cross lines, a rather slender basis, as he admits. Had he examined their antennal structure, figures of which are here given, he would have discarded *fluctuata* without hesitancy.

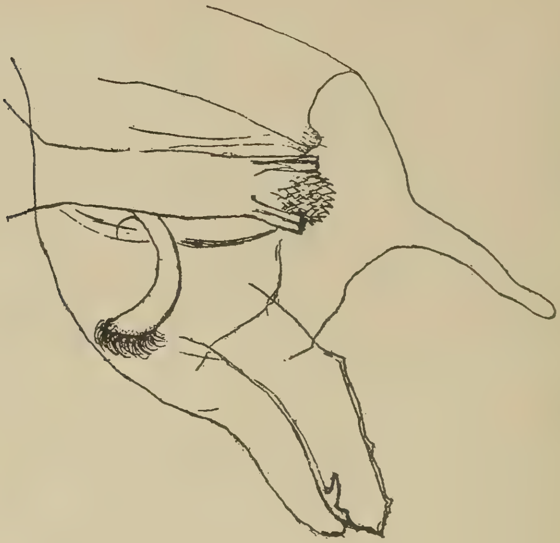
But, it will be noted, in the American species under discussion the antennae are *alike* in structure, and in order to get a positive clue for separation, mounts of the ♂ genitalia were prepared, and drawings in part herewith presented, showing so wide a variation that further comment is needless. A closely analogous position exists between our species of *Nyctobia*



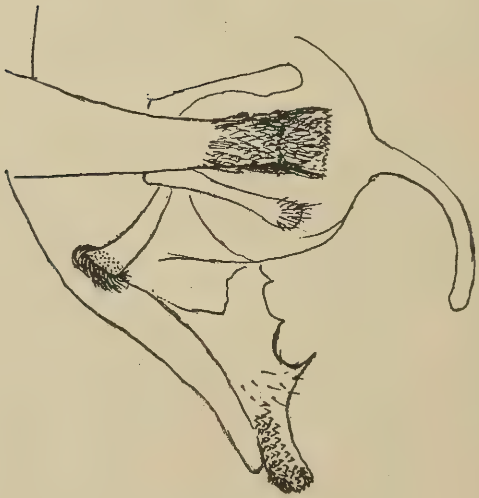
Antenna (under side) of Petrophora pontiaria Taylor and P. iduata Guen.



Antenna (under side) of Petrophora fluctuata Linn.



Genitalia (in part) of ♂ Petrophora iduata Guen.



Genitalia (in part) of ♂ Petrophora pontiaria Taylor.

limitaria Walk, with its endless variations, *anguilineata* Grote and *nigroangulata* Strecker. In my next paper I will endeavor to show their actual relationship.

On Corymbites Protractus.

In the Bulletin for June, p. 77, a *Corymbites* from California is mentioned and provisionally named *Joutelii*. Dr. E. C. Van Dyke, of San Francisco, immediately suggested that it was a light form of *C. protractus* Lec. The specimens were sent to him and he writes: Your *Corymbites* is, as I was certain, nothing more than a rufescent form of *C. protractus*. It cannot be a species, nor even a subspecies. A number of our species of Elateridæ have that tendency to lose their pigment and become a reddish or yellowish, passing into a condition called "rufinism" and comperable to albinism and melanism, in fact intermediate. It is very common among the Carabidæ, among the subterranean, littoral and arctic species.

I am sending for comparison some typical *protractus* and the reddish form taken with them. Also *C. fraternus*, a species which is often confounded with it. The latter is found at higher altitudes and is generally beaten from the coniferous trees, whereas *protractus* is generally to be found in rather wet meadows.

Calosoma Frigidum and C. Willcoxi at Wading River, L. I.

By Wm. T. Davis, New Brighton, N. Y.

On May 29, 1913, it was observed that the trees about Wading River, L. I., were being defoliated by a geometrid caterpillar since identified by Dr. Dyar as that of the "Fall Canker Worm," *Alsophila pometaria*. The larvae were in great numbers and their excrement fell in a ceaseless patter on the dry leaves or the vegetation yet undestroyed. These caterpillars were more abundant in some places than in others and to the south of the railroad station, in the flat country, none were observed. They were particularly fond of hickories and oaks, but devoured the foliage of all the trees and some of the lesser plants, excepting the evergreens. They, however, wasted much of their food supply for the ground was covered in places with bits of partly eaten green leaves that constituted a considerable part of the foliage.

In a hollow to the west of the village and along the main road *Calosoma frigidum* was found in considerable abundance; also *C. willcoxi*, but in less numbers. There were about four of the former to one of the latter. These beetles were engaged in destroying the caterpillars, and a *willcoxi* was seen to run down a tree trunk and seize a caterpillar, which was promptly devoured.

When pursued the *Calosoma* would let go of the tree trunk, fall to the ground and try to hide among the dry leaves, which they often did so effectually as to prevent their discovery. Or they would at first try to climb the tree to a place of safety, or run horizontally around the trunk in order to avoid detection after the manner of squirrels and some Orthopterous insects. A considerable number were observed on the branches of the trees, even out on the small twigs, and, if the trees were jarred suddenly, they would often fall to the ground and scamper away.

On the first afternoon of our visit when the sun was warm, a number of mated pairs of *frigidum* and one of *willcoxi* were observed. In one place seven *frigidum* were seen in an area of about a yard square. This gathering consisted of three pairs and an individual.

A considerable number of *Hister** were also found among the dead leaves on the ground, and they no doubt were either feeding directly on the caterpillars, as they are known to do, or in some way profited by their presence.

Calosoma frigidum was found in some numbers, June 26, 1910, at Rockaway Beach, L. I., and *willcoxi* has occasionally been found at the same place. The writer and all of the members who attended the Society's Decoration Day field excursion had never seen these beetles in such abundance as we found them in the woods about Wading River, though well aware that allied predaceous beetles are often very common in parts of Europe.

*Identified by Mr. Schaeffer as *H. immunis* Erichson.

Animal Communities in Temperate America.

A study in Animal Ecology, By. V. E. Shelford. Bulletin No. 5 Geographic Society of Chicago.

University of Chicago Press, 380 pp., 300 figs., maps, diagrams. $3.22 postpaid.

This important contribution to biology in its ecological (and less formalized) aspects welds into an orderly whole a multitude of detached and heterogeneous observations and data, makes them accessible and serviceable as a basis for systematic study, and throws a flood of light on methods and results to be achieved. It is a genuine pleasure to find a biological work not designed to further and establish some set theory, into whose procrustean bed the subservient facts are tortured. Nature is regarded in its true aspect of a harmonious unity and the interrelations of its component elements are set forth with an unbiased mind. It is one of those rare works which are not "correlated" and in their nature may not be, to the theory of evolution in some of its many manifestations. Sanity is its dominant note. It is, in effect, a brief for "sanity toward nature" which is based upon "a full knowledge of the available facts." Here, in Shelford's own words, we have the touchstone by which to try all biological work. Applied to his own book, it passes the crucial test.

In this necessarily brief note, we can do no more than cite its method, as already done, and enumerate its divisions. The introduction briefly refers to the study of ecology and sets forth general principles, which are more fully developed in six chapters. The remaining nine chapters deal with animal communities of large lakes (as studied in Lake Michigan), streams, small lakes, ponds, tension lines between land and water, swamp and flood-plain forests, dry and mesophytic forests, thickets and forest margins, and prairies. There is an appendix on methods of study. The illustrations are most satisfying, the majority original from photographs, and they actually illustrate the text and are most pertinent to it. An excellent bibliography of 214 titles, divided according to the chapters to which it refers, together with two indices (an authors' and a subject index), close a work which is destined to be of the utmost value to every student of biology, so orderly and methodical is the presentation of the facts with which it deals.

To workers in no biological group will it be of greater interest and significance than to entomologists, especially to such as are dominated by the larger aspects of their science. Indeed, great attention has been given to insects, and no less than 457 species of the 933 animals mentioned are Hexapoda. This work should be in the library of every student of insects whose interest goes beyond the mere naming of species and their arrangement in linear series.

J. R. T. B.

Proceedings of The Brooklyn Entomological Society.

The regular meeting of the Brooklyn Entomological Society was held at the Central Museum, Nov. 13, President Davis in the chair, sixteen members present, and as visitors, Dr. W. T. M. Forbes and Einer L. Olsen, a former member.

The Treasurer reported $50 received for the Bulletin fund, including $25, the gift of W. T. Davis. The Publication Committee reported the copy for the December was all prepared and that the printing would be done in Claremont, N. H.

The President read a letter from the Committee of Entomologists of Cornell University relative to the proposed volume of a list of insects of New York, inviting the cooperation of the Society, the appointment of one of its members as a member of the projected board of editors. After considerable debate it was voted unanimously that the Society should give its best aid to the plan, and it was then voted that a committee of three should consider ways and means and report at the December meeting. The Committee: Bather, Torre-Bueno and Olsen.

It was voted to hold the December Meeting at the Children's Museum.

Mr. Torre-Bueno showed some papers by Dr. Longinos Navas of Spain, describing new species of Neuroptera, among which were *Lomamyia nearctica* and *Chrysopa rubicunda* from Yaphank, L. I., *Malacomyza ventralis* and *Sympherobius buenoi* from White Plains, N. Y.

Mr. Davis presented as Long Island records (identifications by Dr. Forbes) *Chytonix sensilis* Grote, Central Park, L. I., Aug. 12, 1913; Cassville, N. J., Aug. 17, 1910 the record of this rare moth being an addition to the New Jersey list; *Orthosia auriantiago* Guénée, Riverhead, Aug. 5, 1913; *Nymphula obliteralis* Walker, Yaphank, July 25, 1908, three specimens.

Mr. Schaeffer reported the Hemip. *Lygaeus bicrucis* from his garden, Brooklyn, November. Mr. Nicolay has taken them at Rockaway.

Mr. Doll exhibited a box of lepidoptera specimens of the 1913 acquisition. He raised during the season eleven species of *Papaipema*. Notably *cerina* Grote came from the wild tiger lily, food plant hitherto unknown. The species bred from Long Island are: *P. duovata* Bird from salt golden rod, *Solidago sempervirens; P. sciata* Bird from *Veronica virginica; P. frigida* Smith from meadow rue; *P. duplicata* Bird from horse balm, *Colensonia canadensis, P. astuta* Bird from the same food plant; *P. lysmachia* Bird from loose strife.

Mr. Schaeffer exhibited specimens of *Mantis religiosa*, of which over fifteen were taken by Robert Schmaltz near Rochester, with egg masses, indicating that the species is more or less naturalized.

The paper by Wm. T. Davis on *Calosoma frigidum* and *C. willcoxi* is printed in the Bulletin. Mr. Weeks spoke of the plentifulness of the three species of *Calosoma*, common at sugar in East New York. Mr. Dow recorded *willcoxi* as not uncommon at light on the edge of Prospect Park, Brooklyn.

Mr. Engelhardt spoke of his recent visit to Lakehurst, N. J., primarily to take *Glœa carinosa*. Success at sugar was more pronounced on muggy nights, especially when it was raining quite hard. November collecting of lepidoptera has brought many species in quantity of the utmost rarity also.

The regular meeting of the Brooklyn Entomological Society was held at the Children's Museum Dec. 11, with vice-president Bather in the chair and 21 members present. It was voted that future meetings should be at the Children's Museum, 185 Brooklyn Ave., unless otherwise stated.

The special committee on ways and means for most efficient co-operation with the New York State College of Agriculture for the preparation of a catalogue of the insects actually found in New York State, reported that a standing committee should be elected for the full period of the labors of the Editorial Board, consisting of one Coleopterist, one Lepidopterist, one Hemipterist, and one for the other orders. It was advised that all records from members pass through this committee for verification. The committee recommended as such permanent committee; Wm. T. Davis, Chairman, in charge of Neuroptera, Orthoptera, and other orders; Chas. Schaeffer in Coleoptera; Jacob Doll in Lepidoptera; Chris. E. Olsen in Hemiptera; and J. R. de la Torre Bueno, representative on the State Editorial Board.

Nominating Committee for officers: Messrs. Engelhardt, Doll, Pasch. Auditing Committee, reappointed, Messrs. Schaeffer and Bather.

Mr. Weeks reported *Cicindela purpurea*, caught at Yaphank, Nov. 20, and exhibited the living specimen in a bottle. For food there had been introduced a *Lachnosterna fusca*, taken beneath the surface of the soil and freshly emerged from pupa and a number of fruit flies, etc.

Mr. Torre-Bueno showed 33 species of Heteroptera found on the tide line at Smith's Point, Fire Island Beach, L. I., July 19, 1913. This lot was remarkable in consisting entirely of the macropterous forms, even of species normally brachypterous. Pentatomidæ were most largely represented, followed closely by Lygæidæ. The most abundant species was a Lygæid, *Eremocoris ferus*, followed closely by *Euschistus variolarius* and *Podisus maculiventris*. The most notable of the forms secured was a single specimen of the long winged form of a Tingid, apparently as yet undescribed and heretofore known only from two brachypterous specimens taken at long intervals. Five specimens of *Aradus uniformis* were taken, some of which had mites fastened to them. Another point of interest was the predominance of Hemiptera, which outnumbered all other orders.

Mr. Nicolay showed a collection of Cerambycidæ, particularly strong in the semiboreal Lepturini. Mr. Pearsall showed a series of *Basilarchia*, spread on their backs by inserting the head of the pin in the corlk This gave a slight convex curve to the upper side of the wings. Mr. Engelhardt showed some *Basilarchia* bred by Mr. Wasmuth in East New York, some normal *astyanax*, others at least approaching the *proserpina* form. Mr. Schaeffer spoke of a *Philonthus*, prettily marked, taken by Mr. Nicolay at Bellport, L. I., which seems to be a new species. Mr. Wintersteiner displayed *Cercyon lateralis* (Staten Island, May 25, 1908, Davis), new to the New Jersey list, known from north Europe, Siberia, and the Pacific coast.

R. P. Dow, Secretary.

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BULLETIN
OF THE
BROOKLYN ENTOMOLOGICAL SOCIETY

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THE MORDELLIDÆ OF NEW YORK STATE.

By Alan S. Nicolay, Brooklyn, N. Y.

Although the following list does not profess to be a complete record of the entire number of species of the family Mordellidæ occurring in the state of New York, nevertheless it is the first list of its kind, and I sincerely trust it will be a help in the task of compiling a list of the insects of New York State.

The Mordellidæ seem to prefer the mountainous regions to the lower levels and a collecting trip "up state" or in the nearby mountain ranges yields a far greater number of species than the low meadows or pine barrens of Long Island. However the pine barrens have a few very characteristic insects. Although the Northern area of the state has not been thoroughly explored several unexpected things have been found; some entirely new to this part of the country. The Catskill and Adirondack ranges are fairly well known. I have received great assistance from Messrs. Davis, Shoemaker, and Engelhardt through the loan of their material.

Anaspis Geoffr.

nigra Hald. Ithaca, N. Y. (Smith), rare.

flavipennis Hald. Catskill Mts. (Nicolay), common. Rare further South.

rufa Say. Common throughout state.

Tomoxia Costa.

bidentata Say. Maspeth, VI, 20 (Shoemaker). Nyack (Davis), Palisades, Van Cortlandt (Nicolay). Not rare up the state, where I have found it in the heat of day actively running in pairs on dead twigs, flies readily when approached.

lineella Lec. Catskill Mts. (Nicolay). Staten Island, VI, 26 (Davis).

inclusa Lec. Catskill Mts. (Nicolay). The last two species quite rare.

Mordella Linn.

borealis Lec. I have a pair of this northern species from the Catskill Mts., the only ones taken in many years collecting by Mr. Pearsall. Not in New Jersey list.

melaena Germ. Catskill Mts., Van Cortlandt, very local and not common (Nicolay).

scutellaris Fab. Common throughout the state. All summer.

octopunctata Fab. Generally distributed, common.

lunulata Helm. Fort Montgomery, VII, 26 (Davis). Very local and quite rare. Resembles the common *marginata,* but readily separated by decided grey bands.

marginata Melsh. Common everywhere, very variable as regards size and markings.

serval Say. Catskill Mts., V, 1 (Nicolay). Not unlike the rare *borealis,* but readily separated by coarser markings. Staten Island, VIII, 13 (Davis).

triloba Say. Van Cortlandt Park (Nicolay).

discoidea Melsh. Long Island, very rare (Smith).

Mordellistena Costa

arida Lec. Bellport, VIII, 7, beating dead pine, rare (Nicolay); Long Island, VII, 5 (Shoemaker).

trifasciata Say. Bellport, VII, Catskill Mts.; Van Cortlandt (Nicolay); generally distributed; common.

lepidula Lec. Catskill Mts., local but not rare (Nicolay).

limbalis Melsh. Rare in New York (Smith).

elegantulus Smith. Long Island type locality.

biplagiata Helm. Catskill Mts., very variable (Smith).

intermixta Helm. Adirondack Mts. to California (Smith).

vapida Lec. Staten Island (Nicolay).

bipustulata Helm. New York (Smith).

atriceps Smith. New York type locality.

picipennis Smith. New York (Smith).

scapularis Say. Van Cortlandt Park, Catskill Mts.; occurs in Highlands (Nicolay), Ramapo VI, 12 (Davis).

comata Lec. Bellport, VI–VII (Nicolay). Common; a variety of *marginalis,* none of the characters differentiating both being constant.

aspersa Melsh. Common everywhere.

indistincta Smith. Adirondack Mts. (Smith).

tosta Lec. Not rare in New York (Smith).

picilabris Helm. Bellport, VI, 24 (Nicolay). Evidently one of the few maritime species. Local and rare.

ancilla Lec. New York (Smith).

varians Lec. Staten Island, VI, 30, on flowers of wild parsnip (Davis). I am a little in doubt as to correctness of determination as specimens at hand are old and greasy.

grammica Lec. Jamaica (Nicolay), Floral Park, VI, 25 (Schott), always rare Staten Island, on flowers of wild parsnip (Davis).

impatiens Lec. New York, rare (Smith).

ruficeps Lec. Staten Island, VIII, 10 (Davis).

splendens Smith. Staten Island, VIII, 29, "on *Spartina*" (Davis). Very local but evidently not rare where found. A species of Southern range, preferring maritime regions.

pustulata Melsh. Common throughout State.

morula Lec. Staten Island (Leng). West Point, VI, 4 (Davis). A good insect to take.

marginalis Say. Common throughout State.

schauppi Smith. New York (Smith).

pubescens Fab. Common everywhere.

liturata Melsh. Jamaica (Nicolay), Aqueduct, VII, 27 (Shoemaker), Staten Island (Davis).

fuscata Melsh. New York (Smith).

pityptera Lec. Catskill Mts., VIII, 3 (Nicolay). A very rare insect heretofore recorded only from Pa. and Texas.

cinereofasciata Smith. New York (Smith).
attenuata Say. New York (Smith).
discolor Melsh. Staten Island, VII, 23 (Shoemaker).

THECLA SYLVINUS AND ALLIED SPECIES.

By William Phillips Comstock, Newark, N. J.

1. **Thecla sylvinus,** Bdvl., 1852. Region of San Francisco, Cal.
    Var. **itys,** Edw., 1882. Prescott, Arizona.
    Var. **putnami,** Hy. Edw., 1876. Utah.
2. **T. dryope,** Edw., 1870. California.
3. **T. acadica,** Edw., 1862. Eastern States.
    Syn. *souhegan,* Whitney, 1868.
4. **T. californica,** Edw., 1862. California.
    Syn. *borus,* Bdvl., 1869. California.
    Syn. *cygnus,* Edw., 1871. Nevada.

The recent appearance of M. Oberthür's paper figuring the Boisduval types furnishes an opportunity for the revision of that group of Theclas about which considerable ignorance has existed since the days of W. H. Edwards and Henry Edwards who described the majority of the species.

T. sylvinus, the first species of the group to be described, has never until now been figured, and has not been recognized by American entomologists, a fact that W. H. Edwards remarked upon in his Catalogue of Diurnal Lepidoptera of 1884. I have specimens from Pasadena, Cal., Summit, Cal., and one male captured by Henry Edwards, labeled Sierra Nevada, Cal., which are quite typical; also a series from Jemez Springs, New Mexico, and Verdi, Nevada, which are slightly more ruddy above than the type.

I have listed *T. itys* as a variety of *sylvinus.* It was described from one male and two females from Prescott, Ariz., and there were apparently more specimens before the author when he made his description. I have a male metatype bearing W. H. Edwards' label which is curiously marked a female. Dr. Holland in his "Butterfly Book" figures a male which he also calls a female, probably because so labeled by Edwards. *Itys* is distinguished by being mouse-colored above with little or no trace of the fulvous suffusion into which typical *sylvinus* runs. It is identical with *sylvinus* below. It appears hardly worthy of a varietal name.

T. putnami I have studied from a series of over 200 specimens from Provo City, Utah. It varies remarkably, but maintains certain constant characters which differentiate it consistently from *sylvinus*. The males vary on the upper side from specimens moderately suffused with fulvous at the anal angle and along the wing margins of primaries and secondaries, to plain dark mouse-colored specimens. The females vary similarly except that they tend toward a greater amount of fulvous suffusion. On the under side of both wings the median row of spots varies from a row of heavy spots to an almost complete disappearance of spots. There is a constant character of differentiation between *putnami* and *sylvinus* to be found in the paleness and diffusion of the anal patch of blue scales beneath on the secondaries and the constant diminutive size of the orange spot near the margin between veins VII_1 and VII_2. This often consists of no more than a dozen scales in *putnami*, whereas in *sylvinus* there is a well-defined patch which usually covers an area 1 mm. in diameter. I think *putnami* worthy of a varietal name.

Mr. Wright in "Butterflies of the West Coast" shows figures of a butterfly under the name of *dryope*, the coloring of which is paler than typical *sylvinus*. This may be another variety or a local race, as the specimens are from the mountains. It is not *dryope*.

In Mr. Wright's "Butterflies of the West Coast" figures 309, 309a and 311 agree with my determination of male *itys* except that they are generally darker than my specimens. His 311b and 311c are female *putnami* I believe.

Of *T. dryope*, Edwards, I know very little except for the metatypes, male and female, in the American Museum of Natural History, and one male which I possess taken in Marin County, Cal. It is a distinctly tailless form and in that respect differs from all the other forms in the group. It is allied to *T. sylvinus* more closely than to the two following species. Mr. Wright figures *sylvinus* under this name.

T. acadica, Edwards, is the eastern representative. It ranges from the middle states northward to Canada and westward to Nebraska, Idaho and Montana. It exhibits minor variations in different localities, but I have always found it recognizable. The figures in Holland's "Butterfly Book" and elsewhere are reliable.

T. californica is also distinct, being a well characterized species, richly marked and considerably variable. It is not correctly figured in Mr. Wright's "Butterflies of the West Coast"; the insect he figures as *californica* agrees best with *itys.*

In studying the Theclas, the value of examining old and worn material in conjunction with fresh specimens has been impressed upon me. I believe that much confusion has occurred in literature from the naming of worn specimens, and that many doubtful species will be cleared up when proper comparisons are made. I have seen many types which are worn, old specimens, often with the marking nearly obliterated. Descriptions made from such material are dangerous and are apt to be very misleading. Therefore I find it of great value to have flown and naturally battered specimens for comparison, as they often give a clue. It is regrettable to have such material figured as that presented in Mr. Wright's book, the poor specimens combined with the mechanical defects of the three-color process giving incorrect color values and misinformation. The comparison of fresh and worn specimens of a species broadens one's conception of that species and helps to an understanding of the variable collection of individuals grouped under the name of a species. In working over this group of Theclas I have first tried to determine what the insects were which the various authors described and then to relate them as correctly as possible. I have seen the material in New York, Brooklyn, Philadelphia and Washington, rich in types, paratypes and topotypes, and have made comparisons with my own identifications for accuracy.

THE DRAGONFLY ANAX LONGIPES ON LONG ISLAND, N. Y.

By William T. Davis, New Brighton, Staten Island, N. Y.

In the list of dragonflies of the vicinity of New York City published in the Journal of the New York Entomological Society, Vol. XXI, March, 1913, *Anax longipes* Hagen is recorded from four localities. The insect seems to be rare in collections, for after the appearance of the list three letters were received asking for specimens or concerning the species.

Some years ago Mr. and Mrs. Frederick F. Hunt, of New York City, collected for me in the month of March a number of examples of this species about a little pond near Pass Christian, Miss., and they have informed me that the insect was exceedingly abundant at the time.

Commenting on the records for the vicinity of New York City, Mr. Charles Dury, of Cincinnati, Ohio, wrote under date of April 23, 1913, "I was surprised that you have taken *Anax longipes.* I saw one once at Spring Grove Cemetery here and devoted a part of two days trying to catch it. It sailed up and down the lake, at times coming within a few feet of me, but I never got a stroke at it. I finally got a permit to shoot it, but when I went there with the gun, the bird had flown! I never saw another and this is the only record for Ohio."

In The Ohio Naturalist, Vol. XIV, p. 219, Dec., 1913, Mr. Rees Philpott records the capture of a male *Anax longipes,* July 25, 1913, about one half mile south of Lake Laboratory, Cedar Point, Sandusky, Ohio. On the same page of The Ohio Naturalist, Prof. James S. Hine, in "A Note on *Anax longipes* Hagen," refers to Mr. Philpott's capture, also to Mr. Dury's published record in the Journal of the Cincinnati Society of Natural History, Vol. XIX, p. 169, concerning the Spring Grove individual seen on June 2, 1898, and continues as follows: "*Anax longipes* may be considered a tropical species by preference, for most specimens have been taken well South, however, its range is from Brazil to Massachusetts. Its capture is recorded from Brazil, 15 degrees south of the Equator, while the Massachusetts locality is 42 degrees north of the Equator. It does not appear that more than a score of specimens are in the collections of the world."

In view of the above statements it may not be uninteresting to mention some of the facts concerning the local records. On June 5, 1881, a male was collected in Clove Valley, Staten Island, N. Y., while it was resting on a large boulder in an opening in the woods not far from a pond. Near the same locality a male was seen on

August 9, 1885, and another on August 2, 1908. Also in 1908, a male was seen at Lakehurst, N. J., July 11, and another at Yaphank, Long Island, N. Y., July 26. A male has also been seen about a pond near Orange, N. J. These records have been published in the Journal of the New York Entomological Society in 1898 and 1913.

On June 25, 1913, I visited Long Pond, which lies two miles south of the village of Wading River, Long Island, where I saw more living *Anax longipes* together than on any previous occasion. There were about six males and three females along the margin of the pond particularly where there was some vegetation in the water. The males were flying up and down, often making excursions a short distance inland. One captured a lepidopterous insect and flew with it to a secluded place among the low oaks on the hillside. I saw one female laying eggs among the water plants in Long Pond, and two others similarly engaged in one of the small ponds about one hundred feet in diameter lying to the South, but close to the main pond. The females sometimes entirely immersed their abdomens, and under such conditions must run considerable risk of being devoured by fish and turtles. The colors of the female in life are not nearly as bright as those of the male, whose brick red abdomen and bright green thorax and head make a beautiful and striking contrast as the insect darts about in the sunlight, or poises itself at a safe distance and contemplates its would-be collector.

One of the females at Long Pond was captured on the wing and a note made of her colors in life. The front, eyes and thorax are bright green. The abdomen has the first two segments green, and the succeeding seven mottled with brown and green. Five segments have each six spots of green more or less well defined, four of them observable from above and two from beneath. Segments eight and nine have on the dorsal surface but one spot each on either side of the abdomen and one spot each on either side on the ventral surface. Segment ten is brownish above and a little lighter beneath.

On June 28, 1913, I visited Wyandanch, Long Island, and saw four male *Anax longipes* flying about the pond that lies to the eastward of the village. One of them chased a *Pyrameis atalanta* butterfly that was crossing the pond and nearly knocked it into the water in its efforts to capture it; the butterfly, however, beat a hasty retreat to the shore. As it commenced to rain about 11 a.m. the dragonflies retired to some sheltered place.

It will be seen from the foregoing that *Anax longipes* is not an uncommon dragonfly on Long Island during some years at least, though it is not very easy to capture. It is a conspicuous object, however, and can hardly be confused with any other of our native species.

THE EARLY FRENCH COLEOPTERISTS.

By R. P. Dow, Brooklyn, N. Y.

(Concluded from page 13.)

A soldier of Napoleon never rusted out. He wore out. Eyesight and general health stopped Dejean's work. Another enemy was finance. He had been living beyond his means. The Dejean collection was offered for sale, partly from a natural pique, as he fancied for the minute that he hated the life work of forty years which he could no longer see, and partly because he could not afford to give it away. The French Government considered its purchase, but with the ingratitude and dilatoriness of an approaching republic. The collection was finally sold in parts, the various families becoming widely scattered. The Carabidæ went to Baron Chaudoir, thence to René Oberthür, of Rennes, France. The Lepidoptera were divided by Rev. Francis Hope and Boisduval. The Gallerucini were bought by the Marquis de Bremes, whence they passed to the permanent custody of the Museum of Turin; the Hispini went to L. Reiche to be resold years later to the Marquis de la Ferté; the Eumolpini and Halticini were bought by the Marquis Spinola; in turn they appeared in the Mannerheim collection; La Ferté had also at one time some of the Carabidæ, all the Scarabæidæ, and some others; Chevrolat took the Cerambycidæ; Lacordaire bought the Erotylidæ; many of the Tenebrionidæ went to the Museum of Lyons; the Cassidini were bought direct by Mannerheim; the Meloidæ turned up many years later in the collection of Fred Bates in England, that gentleman giving a couple of types to Dr. Horn in 1890. La Ferté had at one time possession of the Elateridæ, and Spinola the Staphylinidæ. The fate of the Rhynchophora cannot be learned from the available records. The water beetles, including all American types, belong to M. Oberthür.

His collection dispersed, this poor soldier and statesman found time heavy on his hands. He had his name proposed for membership in the Entomological Society, something which he had refused for five years. He attended meetings and published a few unimportant papers in the annals. The first coleopterist of the world was nothing without his collection. He watched the world progress beyond his reach and died in 1845.

Another gentleman has left his mark on the page of history, who can only be considered by himself, rather than a member of a body of science. The work of Ambroise M. F. J. Palisot de Beauvois seems to have been done largely aloof from the other coleopterists of the time. It covers his own collection, acquired from 1781 to 1797 from Africa, San Domingo and other West Indies, and the United States. Publication of the folio describing it was begun in 1805. His death in 1820 left it incomplete, and it was finished in the following year by Audinet-Serville. This elaborate work had only 267 pages of text but had 90 colored plates done with as much skill as the mechanical ability of the day afforded. His American species still in the check-list are thirty-one.

The Museum of Paris, which missed the chance of becoming the first in the world in importance by acquiring the Dejean collection, was nevertheless second only to that of Berlin. Its earlier collections of insects were disgracefully neglected. M. Lamarck, an eminent scientist, was for many years the Director, but he was no Entomologist. Tens of thousands of insects remained for years in their original alcohol bottles. It had the whole collection of Dubosc, with the original labels of Fabricius. It had all the insects of Olivier from Persia and nearby Eastern Asia. When Lamarck died in 1830, Latreille was his successor. He, in turn, suffered under two great handicaps. "Facile Princeps" was the title given to him by acclaim on all sides, but old age was upon him, and, moreover, his was that retiring disposition which could never ask for help, much less favors. He could not clean the Augean stables. In 1833 Prof. J. V. Audouin,* who filled the Chair of Entomology in the Jardin des Plantes, was called to take the place of the great master. Audouin was primarily a hustler. In the first place he asked for the appointment of a first assistant, Auguste Brullé, who subsequently became Professor of Zoology at Dijon and a recognized master of the science. A second addition to the staff was Hippolyte Lucas, who also arrived at fame in later years, studying all orders. A little later a youth of 17 was employed to mount and arrange specimens. This was Emile Blanchard, whose subsequent reputation is no less. This quartet made the arrangements of the Entomological collections under the general plan still in use.

It was a foregone conclusion that the home of Latreille should develop a following in the study of natural science. The number of entomologists was especially large. A common meeting place became a matter of the utmost importance. Largely through the efforts of Alexandre Lefebvre, a well to do amateur, the Entomological Society of France was formed, the first of its kind. Dues were made low and included the projected Annals. This publication was started as soon as the Society was formed, is prominent today and will continue so after the present generation is long since forgotten. The Society itself made arrangements with the Department of Agriculture for a subsidy, which makes it the richest in the world. Its early members include all the great names of France. By acclamation Latreille was elected the first president. He did not live out the year of his office. His fellow members laid him to rest in Pere la Chaise, and erected a monument over him. On its top was carved a *Necrobia ruficollis*.

In the new Society was Charles Aubé, born in Paris 1802, a gentleman of independent means, a physician, who was the first treasurer. His first experiences were in connection with the Dejean collection. He monographed the Pselaphidæ. In later years he became the best authority on the water beetles, describing Dejean's material with a clearness never since excelled. Duponchel, Dejean's early friend, was vice-president. He monographed the Erotylidæ from the Dejean material, but in after years turned Lepidopterist. Jean Theodore Lacordaire was assistant secretary. This young man, bred to the law, felt the *wanderlust* and made two trips to Brazil and Buenos Ayres. He devoted the rest of his life to working over the material collected on these trips. His Introduction to Entomology, published in 1834, was immature. He gave unlimited credit to Kirby and Spence, but frankly confessed ignorance of German, which prevented him from reading the great works of that nation. In 1859 he published his Genera of Coleoptera, which the world regarded as authority until the Leconte and Horne classification. J. G. Audinet-Serville was Curator. This scientist devoted all his time to Entomology, confining himself to no one order. He completed the work of Beauvois. With Ch. J. B. Amyot, a Paris lawyer, he monographed the Hemiptera for the Suites à Buffon, a subject previously written on by the Marquis Spinola. Among his new genera as many as possible were named for that nobleman, the name Spinola being transformed into the maximum number of anagrams. It seems that the Marquis had his sweetheart, Theresina by name. He made his generic names as far as possible from anagrams of this word. He edited, with Lepelletier de St. Fargeau, an extensive work on the fauna of France. Several works on the Orthoptera followed. The achievement which makes him prominent in our check-list was a Classification of the Cerambycidæ, which was prepared for the first volume of the Annals. This work included three species and forty-one genera which survive.

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* Cf. *Omus aud ouini* Reiche.

Dr. J. A. Boisduval, the great Lepidopterist, was a charter member of the Society and incidentally named one American beetle. Lucien Buquet was a clerk in the Ministry of Marine. He liked the Cerambycidæ best of all, and, like many others, made a regular business of selling his duplicates, especially rich in specimens from Senegal and Java. De Saulcy, who has a mention in the check-list, was a Lieutenant of Artillery and had a good collection from Peru, Asia Minor, Greece, etc. F. de Laporte, eldest son of the Count of Castelnau, and himself later succeeding to the title, had a splendid general collection. He described many Hemiptera but his greatest work was on Coleoptera with Gory. Chevalier Gory himself was a Captain of

Cavalry, and had a collection almost second to that of Dejean, numbering over 18,000 species, mostly exotic. His monograph, collaborating with Percheron on the Cetoniæ, is still famous. Auguste Chevrolat holds one of the most conspicuous places in our check-list. He was head accountant in the Octroi service of Paris. His beetles were almost as many as those of Gory. Alexandre Leseur, who figures in the check-list, was in Mexico for five years collecting constantly. His immense material was bought by Chevrolat and Dupont, the latter taking the Rhynchophora. Thus Chevrolat obtained nearly 5,000 species. Leseur also had a fair collection made around Philadelphia. Chevrolat also had one of the best Libraries in Europe. After his death his collection was sold piecemeal, and his types too scattered to trace.

Dr. Leon Dufour, by his fame made an honorary member, was not primarily a Coleopterist. Duméril lived to the age of 84, always an active member. Dupont cannot be distinguished in the check-list from Duponchel. He was a tutor to the Princes of the Royal family. After his death, his Rhynchophora went to Jekel, who bequeathed them to the British Museum. His other beetles were bought by Count Mniszeck. Foudras was a professional Entomologist at Lyons. He created *Epitrix* and other important genera. Achille Guénée, the great authority on the Noctuidæ, had also a good collection of beetles which was never neglected. Felix E. Guérin-Menéville excelled as an engraver. He became famous first from his plates for Cuvier's Animal Kingdom, which appeared from 1829, and of which there were 450 in color. He designed and published from 1831 his own Magazine of Zoology, with a primary purpose of affording a vehicle for the descriptions of new species. This work never lacked famous contributors and was a serious rival to the Annals. After 1845 Guérin allowed his magazine to pass into other hands and contributed constantly to the Annals. A complete set of the Magazine is a literary treasure than which there is no greater to an entomologist.

Lanier, for whom *Arrhipis lanieri* Guér. is named, lived in Havana and described Cuban beetles. Count Le Pelletier had the best collection of Hymenoptera of his time. P. M. H. Lorquin was a local amateur. His son settled in San Francisco and became a dealer in insects, a number being named for him. F.

M. J. Luczot, Chief Engineer of Bridges in the Government service, has species named for him but was not a describer. Achille Percheron was a member of a wealthy Norman family, who had a fine library and wrote freely for Guérin's Magazine. Felipe Poey, Father of Cuban Entomology, was a Parisian by education. So was Ménètries, head of the St. Petersburg Museum. L. Reiche was a retired officer of public health at Paris, later becoming a banker. Chas. Rey was a naval lieutenant, stationed at Toulon. Theodore Roger, who had one of the most notable collections of the time, about 15,000 species of Coleoptera and 10,000 of Lepidoptera, was the head of a banking and wine house at Bordeaux.

Auguste Sallé was not a member until much later. His widowed mother organized a syndicate of backers for an entomological trip through Mexico. There were three in the party and in three years they sent home over 30,000 insects, mostly beetles. Capt. Solier lived in Marseilles and depended on the Dejean collection for his early works. Baron Walkenaër, President of the Society for 1835, was the best authority in the world at this time on spiders.

There are other great French names in Coleoptera, but it is evident that the greatest were those which had to do with the formation of the Entomological Society of France and its early days.

PROCEEDINGS BROOKLYN ENTOMOLOGICAL SOCIETY.

The regular meeting of the Brooklyn Entomological Society was held at the Children's Museum, February 12, 1914, called to order by President Davis. Six members present. The secretary being absent, the minutes of previous meeting were not read. The treasurer reported Society funds $459.59 and Bulletin account deficit $4.59. Mr. Torre-Bueno, on behalf of the Editorial Board of the New York State List of Insects, reported on a meeting held February 7, at which blanks to be used for insect records were distributed. These blanks have been left with Mr. Schaeffer from whom all members are asked to get a supply.

Mr. Torre-Bueno recorded the following Hemiptera caught on Long Island: from Forest Park, June 27, 1903, *Alydus eurinus, A. pilosulus, Archimerus calcarator, Mineus strigipes, Geocoris ater, Calocoris rapidus, Poecilocapsus lineatus;* on November 7, 1903, *Notonecta insulata, N. undulata, Belostoma flumineum, Lethocerus americanus;* from Richmond Hill, *Notonecta irrorata* and *N. undulata.* Mr. Olsen recorded from Rockaway Beach, October 5, 1912, *Ceraleptus americanus* and *Anasa armigera,* collected by Mr. Schott. Mr. Davis read a paper on "*Anax Longipes* on Long Island," printed in this number of the BULLETIN. He also recorded *Celithemis monomelaena* from Wading River, June 25, 1913. Mr. Torre-Bueno on "Phototropism in Heteroptera" reviewed briefly the available records of captures at light. These showed only a total of 59 species, the small number being, no doubt, due to lack of observation. He also exhibited a collection of beautiful Heteroptera made by Mr. J. M. Geddes in British Guiana, containing 29 species, including three new, all taken at light. A more detailed account is to be prepared for publication. Mr. Weeks' paper on "Insect Conservation" was postponed until the next meeting.

The annual meeting of the Brooklyn Entomological Society was held at 185 Brooklyn Ave., January 15, 1914, with President Davis in the chair and seventeen members present.

Mr. Weeks reported on the condition of the Library and publications in storage, stating that the supply of Vol. 4 of the Entomologica was exhausted. An inventory is being taken, and he promised to deliver to the secretary a supply of all saleable publications at an early date. The audited report of the Treasurer was approved.

The following tenders of resignations were read: Michael Weiss, H. G. Barber, S. C. Wheat, and Dr. Frank E. Lutz.

Report of the Librarian accepted. The election of officers was by a single ballot cast by the Secretary: President, Wm. T. Davis; Vice-President, Wm. T. Bather; Treasurer, Chris. E. Olsen; Recording and Corresponding Secretary, R. P. Dow; Librarian, A. C. Weeks; Curator, Geo. Franck; Publication Committee, Chas. Schaeffer, J. R. de la Torre-Bueno, and the Recording Secretary; Member of the Executive Committee, J. R. de la Torre-Bueno. The president appointed Chas. E. Sleight as Delegate to the Council of the Academy of Sciences; and F. M. Schott and F. Conrad Pasch as the Field Committee.

Mr. Schaeffer reported that a *Philonthus* from Bellport taken by Mr. Nicolay is probably *cruentatus,* a European species. Another *Philonthus* from Long Island, taken by Mr. Shoemaker, corresponds most nearly to *P. atratus,* a boreal species. Mr. Davis showed some Lepidoptera of Mr. Nicolay's catch, the prize among which was an *Apantesis figurata,* beaten from scrub oak at Bellport, which had much less red in the primaries than the typical form. Mr. Schaeffer reported *Erebus odora* from Miller's Place, L. I., taken by Arthur Helme, the ornithologist. Mr. Schott exhibited two boxes of rare insects, notable among which were: *Amnestus spinifrons* from Rockaway; *Perilloides exaptus, Pangaeus bilineatus; Largus succinctus; Ectrichodia cruciata; Melanolestes abdominalis* and *picipes; Leptura abdominalis* ♀ (from Lakehurst); *Hammaticherus mexicanus* from Classon Point, N. Y., a Mexican species (not recently recorded even from southernmost Texas, and, of course, an accidental introduction); *Centrodera picta* from Ft. Montgomery, N. Y.; *Pomphopaea aenea* from Ft. Montgomery (we have Long Island records also); *Ceratographis biguttata,* a scarce insect even at home, Kentucky and southward; *Phymatodes infuscatus* from Wyandanch; *Myodites stylopides* from Huntington; *Myodites luteipennis* from Ft. Montgomery; *Amara rubrica* with a long slender fungus growth from its abdomen under one elytron; *Leucaspis affinis* parasite on a *Megachile;* a *Chlaenius* with a long *Gordius* worm; *Catocala micronympha* from Lakehurst; an aberrant *Vanessa antiopa* with the blue markings entirely obliterated; an albinic *Cecropia* with the rufous bands covering over half the secondaries; *Pelecinus polyturator,* ♂ and ♀.

Mr. Olsen showed a *Ranatra kirkaldyi* taken by Mr. Wintersteiner in July at Totowa, N. J., the first actual record for that State. He spoke of collecting experiences at Honesdale, Pa., and showed a box of the insects, which will be mentioned in detail later. Mr. Engelhardt suggested that for a future meeting a leader be chosen to take up a group of genera at a time, to collect and classify our records for the State list and our own Long Island list. The meeting ended in informal discussion over refreshments.

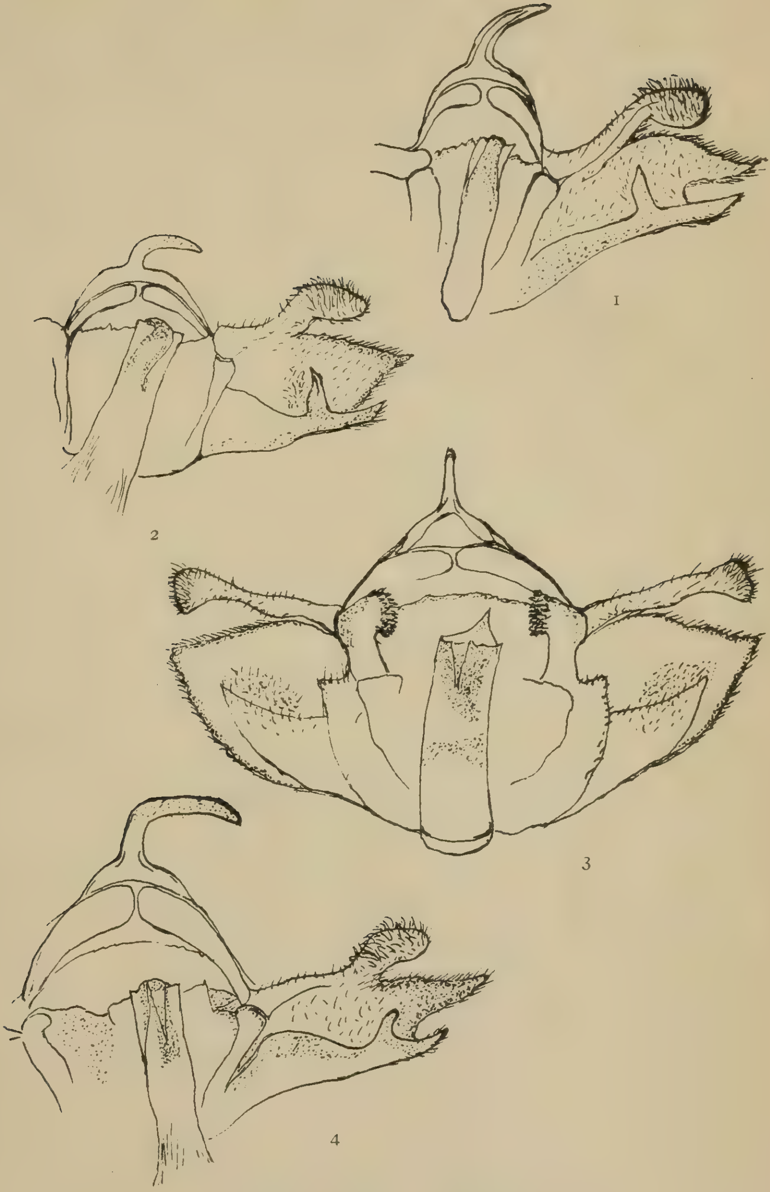
R. P. Dow, Secy.

SHORT STUDIES IN GEOMETRIDÆ—NO. 3.

By Richard F. Pearsall, Brooklyn, N. Y.

Nyctobia limitaria Walker.
=**lobophorata** Walk.
=**fusifasciata** Walk.
=**longipennis** Walk.
var. **reiffi** Swett.
anguilineata Grote.
nigroangulata Strecker.
Agia viridata Packard.

Of *limitaria* my series comprises over two hundred specimens, exhibiting every phase of variation. These were separated into five distinctive groups, and from a male of each group genitalic mounts were prepared. These show a great resemblance in all parts, one to the other, so that the conclusion is forced upon us that we are here dealing with but one extremely variable species. *Anguilineata,* which shows a somewhat different pattern in its colors and markings, also shows a distinct difference in the shape



PEARSALL: STUDIES IN GEOMETRIDÆ.

and position of the uncas, the claspers and harpes, as well as in other parts, quite enough to entitle it to specific standing. *Nigroangulata*, our large western species, varies somewhat in markings, but not nearly to the extent of *limitaria.* It is quite easily separable as a species, and the genitalia bear out this assumption. Drawings, in part, of the genitalia of each of these species are here presented to evidence the difference between them; and it is a very desirable thing to know, for I must confess that I have always been uncertain as to the exact relation between the forms of *limitaria* and *anguilineata.*

Viridata, a rather rare species in collections, was tentatively retained in the genus *Nyctobia* (Can. Ent., vol. 39, p. 371) by the author. While agreeing with the requirements of that genus in many respects, there remained the great length of its palpi and different style of markings, features which did not assimilate. The drawing here given of its genitalia would indicate a positive generic separation. There being none that it can enter, though close to *Lobophora,* I have restored for it in my own collection, the genus *Agia* Hulst, of which under the name of *eborata,* it was made the type. In the paper referred to, I also placed *vernata* Pack. as a synonym of *anguilineata* Grote, but the sole type of *vernata,* now at Cambridge, is a much worn example of *Cladara atroliturata* Walk., and it will be noted, his original description (5th Rep. Peabody Acad., p. 56) might easily apply to it. He had then but a single male and female before him, but in the "Monograph" he cites three males and three females, his figure (plate 8, Fig. 13) indicating a form of *limitaria.* In any event it is a synonym, and since a type, whether original or not, is existent, it would best stand under *atroliturata.*

Explanation of Plate.

Fig. 1. Genitalia of ♂ *N. limitaria.*
Fig. 2. Genitalia of ♂ *N. anguilineata.*
Fig. 3. Genitalia of ♂ *Agia viridata.*
Fig. 4. Genitalia of ♂ *N. nigroangulata.*

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Vol. IX JUNE, 1914 No. 3

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OF THE

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BULLETIN
OF THE
BROOKLYN ENTOMOLOGICAL SOCIETY

VOL. IX JUNE, 1914 NO. 3

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SOME EARLY BROOKLYN ENTOMOLOGISTS.

BY EDWARD L. GRAEF, Honorary President of the Brooklyn Entomological Society.

In 1848 my parents came to the United States from Aix-la-Chapelle, Germany, with my five brothers and sisters and myself, the youngest, six years of age. We settled in that part of Brooklyn then known as Yellow Hook, now Bay Ridge, where my father, Henry A. Graef, established himself as a florist. He had previously been interested in natural history, principally botany, and upon his arrival here, began making a collection of local plants.

Several years later we moved to the more central portion of the city, and subsequently, while attending Prof. Joseph Deghuée's school from 1853 to 1858, I formed a close acquaintance with two schoolfellows, Frederick Tepper and Augustus Radclyffe Grote. About 1854 we became interested in making collections of insects. Our inspiration undoubtedly came from a small book, "Handbuch für Schmetterlingsliebhaber," von J. W. Meigen,* published in Aix-la-Chapelle in 1827. This gave us much information about

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* This volume by Meigen, the great Dipterest, while, in a way a "pot boiler," was as good foundation to beginners as Europe afforded. It was octavo, 218 pages of text and 16 plates.

Smithsonian Institution
JUL 15

the preparation and preservation of insects. In those days we had no knowledge of cyanide bottles, chloroform, or carbon bisulphide for preservation. We had to use methods of killing which, much to my subsequent regret, not only hampered our work but were highly repugnant to us on account of their cruelty. Equipped with the usual outfit of nets, cigar boxes, pill boxes and pins, we resorted as often as possible to the suburbs of the then relatively small city of Brooklyn. One favorite collecting spot was a vegetable garden, where now is the junction of Flatbush Ave. and Fulton St. Fort Greene Hill, now Washington Park, was another nice wild place. Then, there was the meadow, or sheep pasture, now part of Prospect Park, at that time often devoted to pigeon shooting. Occasionally we took long trips to East New York, Bay Ridge and Parkville, as well as the many intervening unpopulated localities. Grote lived with his parents at New Dorp, Staten Island, where during the summer, he bred many specimens of Lepidoptera and gained considerable knowledge thereby of their earlier stages. I often accompanied him home and passed much time at his house. A keen rivalry arose between the three of us, but later Grote and I decided to form a joint collection. To guard against dispute we marked our respective specimens with our initials, A. and E., as our family names began with the same letter. This arrangement was however, of brief duration, as a violent quarrel ensued, resulting in a division of specimens and reëstablishment of separate collections. We soon became reconciled and the trio devoted ourselves assiduously to collecting until we had very considerable numbers stored away in the customary cigar boxes. We attempted to arrange them according to some system, but were greatly handicapped by inability to get identifications of our material. The only collection to which we had access was insignificant and sadly out of repair in the then so-called Graham Institute on Washington St., the site of which is now occupied by the approach to the Brooklyn Bridge. This institution was the nucleus of the present Brooklyn Institute of Arts & Sciences. In its small library the only work on entomology was "Insects of New York" by Dr. E. Emmons, being vol. 5 the Agriculture of New York, issued in 1854. The information in this was entirely too limited for our requirements, as we had many butterflies not even mentioned. The Graham Institute also possessed a collection of insects. It represented all orders, was very incomplete even in our local species and in a very dilapidated condition. Few, other than the larger and more showy species were named and subsequently it was almost useless for reference.

When the Brooklyn Historical Society moved to its present quarters on Pierrepont St., about 1865, an effort was made to form a collection of insects. I became very enthusiastic about the project and was prepared to devote all my spare time to it, hoping to become its curator. To my disappointment this honor was conferred on Mr. Harvey J. Rich, who was too busy to give much attention to it, and in poor health, dying a few years later. The collection reached only its incipient stage and in due time became a prey to vermin.* From all this it can be readily inferred under what disadvantages our early students were laboring.

One may readily appreciate our delight about this time in *discovering* a man of great value to us, from whom we learned much about rearing specimens, etc., besides being able to buy from him good insect pins,† nets, setting boards, and other entomological supplies. This important personage was the late John Ackhurst, who then lived in Prospect St., where now stands the anchorage of Brooklyn Bridge. I shall never forget his genial, good-natured greeting, "Good morning, lads," as the trio of us stepped inside his door. He appeared to me then about the same as he looked thirty years later, with long hair, great goggle spectacles, smooth shaven, the head surmounted by a square paper cap.‡ He took a fatherly interest in us and gave us much valuable information about collecting. For more than fifty years he took pride in breeding Lepidoptera, particularly rare Sphingidæ and Bombycidæ, and his success in this respect induced the United States Agricultural Department to send to him 100 pupæ of *Platysamia*

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* A portion of it is still preserved in the rooms of the Historical Society, and while of little value yet contains some things of interest.—Ed.

† German entomological pins were first brought to New York by Nanning Kloster in 1842.—Ed.

‡ Mr. Ackhurst had long, flowing hair, which made him look very conspicuous. He explained to me that this was because he used great quantities of arsenic in his work as a taxidermist and his long hair kept the poison from entering his system.—E. L. G.

cynthia with a view to testing their availability as a substitute for the better known silkworm, *Bombyx mori.* He bred them in captivity for three years, then liberated a number on the ailanthus trees, from which undoubtedly all specimens found in this region are descended.*

Although Ackhurst had an extensive acquaintance among entomologists everywhere, he did not join the Brooklyn Society until many years later, and it was partly on his account that the meeting night was changed. He seemed to enjoy the meetings greatly and participated enthusiastically in the discussions, to which he added much by his knowledge and experience. He died at his home, 78 Ashland Pl., Feb. 15, 1902, lacking a few days of 87 years of age. While he gave much attention to entomology, he was more interested in ornithology, taxidermy being his chosen profession. His insect collection was bought after his death by the Chicago University.

Several years after my first meeting with Ackhurst we heard of another man, heralded as learned, with a large collection, and Grote and I met him. His name was Jung. At the appointed hour we came to his house with bundles of boxes with unnamed specimens. To our consternation he was no better posted than ourselves, as his labels were mainly "Sphinx?," "Geometer?," "Arctia?," etc., which we already knew. Shortly after this I made the acquaintance of an old Englishman who had a large collection of insects, and, what was much more important, an extensive, valuable entomological library. He lived on Ryerson st., near Fulton, and collected in all orders, having a large herbarium as well. He was smooth shaven, with a long thin, pointed nose, spectacled and spoke with a strong London accent. This was Stephen H. Calverley. I shall never forget the many happy hours I spent among his treasures.* I well remember that he had a specimen of *Catocala relicta,* mounted in a separate small glass-covered box, as one of his greatest rarities. This had been twice sent to Europe for exhibition and was the only specimen known to us. My friendship with Mr. Calverley was forwarded by the fact that my father had quite a large European herbarium and he stipulated that he would exchange for exotic Lepidoptera, mostly from China, which were to be turned over to me. These and other exotics which Mr. Calverley possessed were obtained by him from sailors employed on the vessels controlled by Moses Taylor & Co., where Mr. Calverley was employed as weighmaster, which position brought him in contact with seafaring men from almost every port. The Chinese specimens were bought from the natives, who arranged them in glass-covered boxes. All orders were included, and they were intended for display as curiosities only.

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* The ailanthus, the tree from China on which the caterpillars which provide the pongee silk of commerce feed, was planted in Brooklyn about 1866 as a substitute to shade trees infested with span worm pest, the *Ennomos subsignaria.* H. A. Graef was the pioneer in asking for spraying the trees with poison. An appropriation of $25,000 for this purpose was defeated in the Board of Aldermen. A physician of Newark advocated importing the English sparrow for the same purpose. This was done, and, whatever may now be said to the detriment of the bird, it did its work. The shade tree span worm has never since been a nuisance in the cities, although three years ago the whole city was white with them one September night, brought by the wind.

Mr. Calverley together with W. H. Edwards and Mr. Weidenmeyer, undertook to publish a monograph on the Sphingidæ. The plates were issued but the mss. were never completed, in fact it is doubtful whether they were ever begun. This work was intended for distribution only among museums and similar institutions, and consequently only 150 copies of the plates were printed. Three copies were to be colored for the three authors and the balance to be distributed uncolored. The plates were destroyed. Although I would have been willing to pay a comparatively exorbitant sum for a copy, Mr. Calverley flatly refused to let me have one, at which I was greatly chagrined. Mr. Calverley intended that his collection should go to the British Museum, but before he made arrangements to that end he became deranged, having become quite old, and was taken to an institution in Auburn, N. Y., where he died. Subsequently his heirs donated his collections, together with the plates of the Sphingidæ, to the Brooklyn Institute of Arts & Sciences.*

* The Calverley collection was merged with the great general collection of the Brooklyn Institute, including all of Mr. Graef's own types, all the Neumogen treasures, and more. The specimen which stands out preeminently still is the type of *Papilio calverleyi* Grote.

* Mr. Calverley was of very secretive disposition. From the way he

About the time of my first meeting with Calverley I formed the acquaintance of Hermann Strecker, of Reading, Pa. I was surprised to learn what an extensive collection he possessed. He had many correspondents in various parts of the world, so we benefited mutually by exchanges. Strecker was by profession a sculptor, but as that art was not then greatly in demand, he found it more lucrative to do tombstone lettering. Of comparatively restricted means, by the most rigid self-denial he accumulated one of the grandest collections of Lepidoptera in the country, publishing numerous papers and describing numerous species. His writings are quite humerous, especially in reference to Grote, with whom he was often on any but friendly terms. His language, not always Chesterfieldian, was pungent, witty and entertaining. He died quite suddenly, November 30, 1901.

Through Prof. Spencer F. Baird, secretary of the Smithsonian Institution at Washington, I learned the name and address of Prof. J. A. Lintner, later state entomologist of New York. I opened correspondence with him and obtained two specimens of *Pieris oleraceæ,* then a great rarity. Through the further kindness of Prof. Baird I received a copy of the "Synopsis of North American Lepidoptera" by Rev. John G. Morris, of Baltimore. This was a valuable acquisition to us as it was the most important work to date in systematic arrangement of the order, and, though incomplete, it constituted a basis for the formation of synoptic tables. It furnished Grote with many ideas and principles pertaining to identification, and he shortly afterwards began describing new species, or what he supposed to be such. One of the first species which he named was *Diphthera graefii* in my honor, but it subsequently proved to be a synonym of *Acronycta innotata.* Grote was

lived and the valuable books he bought he should have been a man of wealth. Singular to state, he left a very small estate and his heirs made inquiries of me as to whether I might give a clue to some of his investments, lest he might have deposited funds in places of which he left no record.—E. L. G.

Mr. Calverley was a tory, also an economist. For many years he employed a neighboring barber. When, during the war the price of a shave was raised generally from six to ten cents, he bought razors and thereafter shaved himself. He regularly took a horse car from De Kalb to Grand St. ferry. When the price was raised from five to six cents he walked and never took a car thereafter.—Ed.

unfortunate in naming insects after me, as he made a subsequent essay in *Scopelosoma graefiana,* which proved to be a synonym of *indirecta* Walker. These descriptions were followed by very many others, principally in the Noctuidæ, as Professor Packard had made a specialty of the Bombycidæ and W. H. Edwards of the diurnals. Grote also published several checklists of North American Lepidoptera. Later he acted as curator of the Buffalo Society of Natural Science. Still later he went to Hildesheim in Hanover, where he became curator of the Roemer Museum. He went to Bremen, where he died in 1905. He may be called a pioneer in his branch of the science, since he helped to create order out of chaos which had previously existed. It is to be regretted that his large collection of types were sold by him to the British Museum.*

Referring again to the Rev. John G. Morris, I shall never forget how, in October 1884, he called at my house in Clinton St. to examine my collection, when he was about 85 years of age. After dinner he complained of extreme weakness and lay down on the sofa. For a time I was greatly alarmed that he was about to expire, but after various remedies he was relieved, as I was. He lived for some years.

Over thirty years ago a young man called on me to see my collection. He was then interested in Conchology but became so enthusiastic over my insects that he begged me for some duplicates and from that time became an ardent Lepidopterist and collector. This was Herbert K. Morrison, who did excellent field work, gathered much information and described a number of new species. He added much information about the insects of distant and thitherto unexplored localities. He collected much in the mountains of North Carolina, later in the White Mountains, then during excursions to Colorado, Montana and Arizona. He brought back a host of specimens, many new to science. His own types, mainly Noctuidæ, were sold to Mr. Tepper, who subsequently sold his collection containing them to the University of Michigan. Morrison married and settled in Morgantown, N. C., where he seemed to lose all interest in the study which made him famous and died young.

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* This immortal collection was offered for a long time in this country. Grote incurred debts, which in honor he thought he must pay without delay. The price of the collection was $5,000. There seemed to be no one then in the United States ready to put up the money.—Ed.

Another old entomologist was the late W. V. Andrews,* a rather eccentric Englishman, who was always at war with Grote as to the determination of a specimen. Grote's first question was invariably "Where did you get it?" Andrews's answer was equally invariable: "Never mind where I got it; what is it?" And then the trouble began. Andrews had a very fair collection of both Lepidoptera and Coleoptera. He described but one species, *Orthosia luteosa*. Grote said to me that he was convinced that the insect was new, but he did not dare describe it. I happened to mention the fact to Andrews who thereupon lost no time in naming and describing the specimen, which name, wonderful to say, stands today. Mr. Andrews died rather suddenly in the early eighties.

In 1869 I received a letter from the proprietor of the California theater in San Francisco requesting that I exchange with him. This was Henry Edwards.* I maintained correspondence and exchanges with him for some years. When he came to New York I became personally acquainted with him. He was connected with Wallach's Theater and later became its manager. He was an Englishman and had traveled in many countries as an actor. He was years in Australia. This afforded him an opportunity of collecting many species in all orders. He possessed a large fund of scientific knowledge and described many species, principally in Sesiidæ and Noctuidæ. Those who came in contact with him will remember him as a genial companion and splendid man.

All that has been stated up to this point is, however, but the beginning of entomological activity in this vicinity. One afternoon about 1870 I was summoned by a neighbor, a Mr. Joseph Huhn, furniture dealer, who had then a place where my store is now located, 58 Court St., to come and see a large insect (!) from Brazil. I hastened to comply, and was introduced to a large, dark-feaured man, Prof. Franz G. Schaupp, who showed me the creature, a live lizard of large size. Although not particularly interested in the specimen, I was deeply impressed by the man. He was of middle age, of very large proportions, weighing perhaps 250 pounds, with a massive head crowned with curly hair well tinged with gray. The hat which he wore would fall around the ears of any person I have ever met. It measured No. 8. He was pleasant, cordial and overflowing with good nature and humor. We soon became greatly interested in each other as well as in insects. Of course, we had to partake of a number of beers, and he insisted on my accompanying him the next day to what was then known as the Eastern District, which place, he stated, fairly swarmed with entomologists, some in embryo, and all of whom he desired should know me. So, the next day we sallied forth and I was duly introduced to everybody in the neighborhood who had a collection, even if it were only in a saloon where the proprietor had a framed case of "flies" hung behind the bar. As a *sine qua non* we had a complement of beers and I may be pardoned if I cannot distinctly recollect all the distinguished entomologists whose acquaintance I formed on that memorable occasion. So much enthusiasm was created, however, that Professor Schaupp and I suggested that we ought to meet regularly and form some sort of an association. Accordingly a meeting was called at Schaupp's room at No. 9 Broadway, which was well attended and resulted in the formation of the Brooklyn Entomological Society, the members of which were mostly composed of those to whom I had been introduced by Professor Schaupp on my first visit with him. Schaupp was the first President and I the first Treasurer. His room, where the Society held its meetings, must be ever memorable in the history of entomology. To those who met here the place is more than memorable.*

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* Mr. Andrews was a prominent contributor to the early volumes of the Canadian Entomologist.—Ed.

* Henry Edwards never destroyed a letter on entomological matters. His entire correspondence went with his collection to the American Museum of Natural History, where after many years it was rescued from masses of unassorted matter, arranged, dated and filed in the Library by Andrew J. Mutchler, assistant curator in invertebrate zoölogy. It will figure prominently in the history of thirty years of American entomology.

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* In this room the BULLETIN OF THE BROOKLYN ENTOMOLOGICAL SOCIETY was born in 1876. The survivors who had most to do with it were Mr. Graef, Mr. Tepper, who has for many years lost interest in the study, and Charles Fuchs, now of San Francisco, whose ill health has practically ended the early career of one of the most beautiful souls on earth, whose interest has never flagged in sixty years. No historic evidence can yet

I would mention among the members of this Society John B. Smith, Rev. Geo. D. Hulst, Dr. H. G. Dyar, Wm. Beutenmuller, Berthold Neumogen, F. H. Chittenden, Wm. Koebele, not to forget those who are doing good work still, such as Chris. H. Roberts, R. F. Pearsall, Jacob Doll, Chas. Schaeffer, Geo. P. Engelhardt. All of them were greatly influenced, if not actually created as entomologists, through the work of the Brooklyn Entomological Society and you will pardon my proud assumption when I state that the entomologists of Brooklyn, through the Brooklyn Entomological Society have done more good work than any other body of men in any city or in the world.

In addition to Mr. Grote's synonyms, the following species have been dedicated to Mr. Graef: *Melicleptria graefiana* Tepper, *Annemoria graefiaria* Hulst, *Caripeta graefiaria* Hulst, *Acanthophora graefia* Hulst, *Encymatoge graefi* Hulst, *Sanninoidea graefi* Hy. Edwards, *Tortricidea graefi* Packard, and the genus *Graefia* Pearsall. Regarding the species *Graefia smithi* Pearsall, Dr. John B. Smith wrote that "if anything will kill this genus it is the combination of names."—Ed.

NOTES ON ILLINOIS PHORIDÆ (DIPTERA) WITH DESCRIPTIONS OF THREE NEW SPECIES.

By J. R. Malloch, Urbana, Ill.

The following notes and descriptions were made from material contained in the Illinois State Laboratory of Natural History. The types of the new species are deposited in that collection. This paper is published by permission of Dr. S. A. Forbes.

Trupheoneura varipes Malloch. This species, which was originally described from a single male from the collection of C. W. Johnson, taken at Lawrence, Kansas, is represented in the State Laboratory collection here by 5 males, taken by sweeping, April 4, 1908, and 2 on April 16, 1909, at Urbana, Ill.

be attained to clear up the matter of the first few numbers, now almost priceless. I have the testimony that they were set in type by Schaupp and confreres and taken in locked chases to the printer. It is certain that the typography was different for three numbers. The most reliable evidence is that an East New York printer took the job, but lacked the type. Schaupp and friends bought a font and actually set (over many beers) the copy. There were giants in those days.—Ed.

Aphiochæta halictorum Melander and Brues. A single male of this species, taken at Algonquin, May 12, 1896 (W. A. Nason). The mesopleura has a number of short setulæ and two strong backwardly directed long bristles on the upper posterior fourth. In other respects the specimen agrees with the original description, the mesopleural bristles being in all probability overlooked.

Aphiochæta aletiæ Comstock. This species has been reared from pupæ of *Tæniocampa alia* by Davis and Webster. The *Tæniocampa* larvæ were obtained at Olney, Ill. State Lab., Nos. 36,-898 and 36,912. Under No. 16,542 in same series there are two specimens of *aletiæ* which were reared from breeding cages containing *Lachnosterna* larvæ. No. 10,337 was obtained under similar circumstances, while No. 29,144 was reared from rotting sugar beet. The facts here given seem to bear out the opinion that, while the larvæ of this species may attack healthy larvæ or pupæ of other insects, they are more generally scavengers, or found attacking injured larvæ or pupæ. I have in addition to the above cases seen examples of *aletiæ* which were found by Dr. C. C. Adams in one of his insect boxes, the larvæ having evidently fed upon the insects contained therein.

A character not given in my paper on the family,* by means of which the female at least may be readily recognized is the presence of hairs on the surface of the fourth ventral segment, which form a rather conspicuous row on the posterior margin.

Aphiochæta aristalis new species.

Male: Black, distinctly shining. Head black, frons glossy; antennæ brown-black, palpi yellow. Mesonotum without distinct pollen; pleuræ glossy, brownish on lower half. Abdomen subopaque; anal protuberance yellowish. Legs black-brown, fore pair yellowish, their coxæ clear yellow, mid and hind coxæ, mid tibiæ, and bases of hind tibiæ brownish yellow. Wings clear, veins black. Halteres deep black, stems brownish.

Frons about as broad as long, surface with many short hairs, 2 pairs of post-antennal bristles present, the upper pair separated by about one third the width of frons, the lower pair much more closely placed and half as large as upper pair; inner pair of bristles in first row nearly in transverse line with upper post-antennals and not much below the level of the outer pair, which are distinctly closer to the eye margin; antennæ of moderate size; arista pubescent, nearly twice as long as frons; palpi rather large and strongly bristled. Scutellum with 2 bristles; mesopleura bare. Abdomen tapering, dorsum with a few lateral hairs. Legs stout, fore tarsus slender; hind tibial setulæ distinct though weak. Costa to slightly beyond middle of wing, first division subequal to the other 2 together, third as long as second; fourth vein curved at base, ending well in front of wing tip; fringe rather close and fine, the length of the hairs about 4 times the diameter of costal vein.

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* This and future references apply to "The Insects of the Dipterous Family Phoridæ in the United States National Museum," Proc. U. S. N. M., Vol. 43, 1912, pp. 411–529. (Ed.)

Length: 1.25 mm.

Locality: Havana, Ill., Sept. 20, 1895 (Hempel).

This species will run down to *inornata* Malloch in my key to the species in Group D in my paper on the family, but may be separated from it by its smaller size, very different venation and other characters.

Aphiochæta nasoni, new species.

Male: black-brown. Frons distinctly shining, only slightly pollinose; antennæ black-brown; palpi clear yellow. Mesonotum shining; pleuræ yellowish brown, glossy on anterior half, posterior half subopaque. Abdomen black-brown, slightly shining; anal protuberance dull yellow. Legs brownish yellow, tarsi darker, Wings clear, veins yellowish. Halteres clear yellow.

Frons distinctly longer than broad, central furrow poorly defined; lower pair of post-antennal bristles about half as large as upper pair; center pair of bristles in first row distinctly lower on frons than outer pair and appreciably farther from eye margin; antennæ rather small; arista almost bare slightly longer than length of frons; palpi larger than third antennal joint, moderately bristly. Mesopleura with numerous short setulæ and one long and strong backwardly directed bristle on upper posterior fourth; scutellum with 2 bristles. Abdomen tapering, segments 2 and 6 subequal, elongated, 5 slightly shorter than 6 and longer than 4, which latter is subequal with 3, anal protuberance small, very inconspicuously haired. Legs normal, hind femora flattened; hind tibia with the setulæ distinct, but hairlike. Wings elongate, costa to distinctly short of the middle; first costal division about 3 times as long as second; angle at fork of third vein acute; third costal division half as long as second; fourth vein leaving at fork of third with a slight bend, running almost straight to margin and ending at distinctly in front of wing tip without recurving; costal fringe fine and close, the hairs about 3 times as long as the diameter of costal vein.

Length: 1.5 mm.

Locality: Algonquin, Ill., Nov. 16, 1896 (W. A. Nason).

This species is named in honor of Dr. W. A. Nason. It differs from *ciliata* Zetterstedt and *subciliata* Malloch in being brownish instead of deep black, in having the frons less glossy, and in the wing venation.

Aphiochæta plebeia, new species.

Male: yellow. Frons brownish, antennæ and palpi yellow. Mesonotum brownish on disc. Legs yellow. Wings clear, veins brown. Halteres yellow.

Frons subopaque; lower pair of pentamerals more than half as large as upper pair; central pair of first row bristles distinctly lower on frons than outer pair and nearer to center; antennæ small, third joint rounded; arista longer than frons, pubescent; palpi slightly larger than antenna, distictly bristled. Mesopleura with numerous short setulæ; scutellum with 2 bristles and 2 microscopic anterior hairs, in the female these hairs are about half as large as the bristles. Abdomen tapering, segments subequal; no distinct lateral bristles on second segment; anal protuberance small. Hind tibial setulæ, 9–10, not as long as the tibial diameter. Costa to wing middle, first and second divisions subequal, third about one fourth as long as second, angle at fork of third vein acute; costal fringe fine and close, the hairs about three times as long as diameter of costal vein; fourth vein leaving at fork of third greatly arcuate, ending distinctly before wing tip.

Length: 1.5 mm.

Locality: Urbana, Ill., July 18, 1885, reared from larvæ found in decaying vegetation, No. 6,889, Ill. State Lab. Nat. Hist.

Allotypes: Two specimens, same data as type.

The females of this species will run down to *winnamanna* Malloch in my table of species in Group D, while the male, having the anterior scutellar bristles much weaker, will run down to *carlynensis* Malloch, from which the different venation readily separates it.

SOME NEUROPTERA FROM THE UNITED STATES.

By Rev. Longinas Navás, S. J., Zaragoza, Spain.

The few Neuroptera enumerated below were all taken by my friend, Mr. J. R. de la Torre-Bueno, and generously added to my collection. The records may be useful, especially as they are of your local fauna. They include, also, species new to science. The enumeration is according to the accepted order of the familes.

Family AESCHNIDÆ.

Boyeria vinosa Say. Lake Mahopac, Aug., 1902.
Æschna eremita Scudd. ♂. Lake Mahopac, Aug., 1902.

Family MYRMELEONIDÆ.

Hesperoleon abdominalis Say. Yaphank, L. I., July 4, 1913.

Family HEMEROBIIDÆ.

Sisyra lampra sp. nov.

Caput facię palpisque flavis; vertice et occipite aurantiacis; oculis fuscis; antennis fortibus, fuscis. Prothorax transversus, fuscescens, ferrugineo punctatus. Meso- et metanotum ferruginea. Pectus fuscum. Abdomen fuscum, apice ferrugineum. Pedes testaceo-flavi; pilis concoloribus; tarsorum quatuor primis articulis longitudine descrescentibus, quinto subæquali tertio.

Alæ angustæ, apice rotundate; stigmate flavido; area costali angusta, subcostali lata; sectore radii unico. Ala anterior membrana in tertio apicali et plaga in tertio posteriore marginis fulvo-fusca; stria fusca ad ortum sectoris radii et alia obliqua ante stigma a costa ad sectorem; ceterum hyalina vel leviter flavido tincta; reticulatione fusca intra maculas, pallida extra illas, striis fuscis longitudinalibus inter venas; sectore radii duobus ramis,

apice vicissim ramosis; paucis venulis, fuscis. Ala posterior membrana leviter tincta præter marginem externum et posticum; reticulatione subtota fusca; stigmate utrimque fusco limitato; sectore radii tribus ramis, duobus primis furcatis, seu duobus, apice ramoso; 6 venulis gradatis in arcum positis.

Long. corp. 2.5 mm., al. ant. 5.3 mm., al. post. 4.5 mm.

Patria. Lakehurst, N. J., June 28, 1911.

Climaciella brunea Say. Yaphank, L. I., July 10, 1913.

Hemerobius stigmaterus Fitch. White Plains, N. Y.

Micromus posticus Walk. Yaphank, L. I., Nov. 25, 1911.

Family CHRYSOPIDÆ.

Chrysopa chi Fitch. White Plains, N. Y., June 3, 1911.

Chrysopa stenostigma sp. nov.

Similis Harrisi Fitch. Flava.

Caput totum cum primo articulo antennarum rubellum; oculis palpisque fuscis; antennis flavis, pilis fuscis vestitis. Prothorax latior quam longior, angulis anticis oblique truncatis, superne marginibus lateralibus late fuscescentibus. Meso- et metanotum ad latera leviter fuscescentia. Abdomen flavum, flavo pilosum, immaculatum. Pedes flavi, fusco pilosi; tibiis posticis distincte compressis, linea impressa laterali distinctissima in tertio medio; tarsis flavescentibus; unguibus basi dilatatis. Alæ angustæ, acutæ, stigmate angustissimo; reticulatione flava, fusco pilosa. Ala anterior area costali parum dilatata juxta basim, subcostali distincte ad venulam basilarem; venulis gradatis 6/8, in series parallelas dispositis; intermediis 5, prima ad ipsum apicem cellulæ fusiformis intra ipsam finiente. Ala posterior venulis gradatis 6/7.

Long. corp. 8 mm., al. ant. 11 mm., al. post. 10 mm.

Patria. Yaphank, L. I., July 25, 1913.

Chrysopa stichoptera sp. nov.

Similis *lineaticorni* Fitch. Viridis.

Caput facie, palpis, duobus primis antennarum articulis albidis; vertice viridi-albo; antennis longis, in quarto basilari nigris; dein sensim pallidioribus, primo articulo forti, externe linea nigra longitudinali signato, secundo externe et apice nigro; oculis in sicco fuscis. Prothorax latior quam longior, antrorsum vix angustatus, viridis; superne linea laterali punctorum prope marginem lateralem rubra. Meso- et metathorax virides, inferne pallidiores. Abdomen viride, viridi pilosum, apice vix pallidius. Pedes virides, pallidi; tibiis posticis linea impressa longitudinali distincta, longa; tarsis flavescentibus; unguibus basi fortiter dilatatis. Alæ hyalinæ, irideæ; stigmate et reticulatione viridibus; apice subacutae. Ala anterior venulis plerisque et axillis furcularium marginalium nigris, venulis gradatis 5/6, intermediis 5, prima ad quartum apicale cellulæ fusiformis veniente; cellula fusiformi angusta. Venulæ gradatæ, una subcostalis pone stigma et aliquot radiales leviter fusco marginatæ. Ala posterior sectore radii ad medium longiter nigro; venulis radialibus tribus primis initis, reliquis totis, gradatis 3/7 totis, excepta prima in utraque serie, nigris; costalibus fere omnibus initium sectoris radii et venulis radialibus ramisque ex parte nigra sectoris procedentibus, nigris.

Long. corp. 7.3 mm., ant. al. 12 mm., al. post. 10.5 mm.

Patria. Yaphank, L. I., July 10, 1913.

Family NEUROMIDÆ.

Chauliodes pectinicornis L. ♀. Lake Mahopac, N. Y., T. D. O'Connor, July 12, 1903.

Family SIALIDÆ.

Sialis infumata Newm. White Plains, July 14; Yaphank, July 5, 1913.

Defoliating the weeds on the bank of the Morris Canal last summer, there were observed dozens of "wooly bears," the larvæ of the common *Diacrisia virginica*. A score of them were thrown into the water, three to six feet from shore. A slight current and breeze carried them straight along. Every caterpillar began at once to swim, all but one turning directly toward shore. One tried to swim across and was lost to observation. All the others reached shore within five minutes, none the worse for their ducking. There was nothing haphazard about their effort. It was a systematic undulating motion, quite like the swimming of a water snake, and quite as deliberate. R. P. D.

ABUNDANCE OF PYRAMEIS CARDUI IN CALIFORNIA.

This spring (1914) the caterpillars of this butterfly have been unusually abundant everywhere, in all the vacant lots, even, of the City of Los Angeles, feeding on the leaves of the mallow, or cheese weed, *Malva parviflora*. They spin the leaves together, in which secure retreat they live without being molested by bird enemies. This year the school children have been putting this butterfly to use in their nature study work, gathering from the vacant lots near the school houses. They gathered whole boxes of the caterpillars, which they watched transform to the chrysalis and finally to the showy butterfly. Surely this charming species has never been put to better use. They have tried some interesting color experiments with the larvæ and in various ways have found something worth while. Fordyce Grinnell Jr., Pasadena.

New Jersey Records.—In the collection of Mr. Marvin H. Mead, of Passaic, N. J., a striking specimen is *Calopistria floridensis* Guénée, taken locally at light. Another, *Polychrysia formosa* Grote, came from Rutherford, nearby. The one is Floridian, the other, of the boreal fauna. Both are records for the New Jersey list.

PROCEEDINGS OF THE BROOKLYN ENTOMOLOGICAL SOCIETY.

The regular meeting of the Brooklyn Entomological Society was held at 185 Stuyvesant Ave., April 16, and called to order by the secretary. In the absence of president and vice-president, Mr. Torre-Bueno was elected to the chair. Present also twelve members.

Report of the treasurer, showing the state of finances in detail was accepted. The librarian reported at length on the books and our own publications in storage, and that all orders received had been filled. He reported that complete separates of Fuchs' Lucanidæ were not in the library and that orders for these could not be filled. Entomologica, Vol. 4, was restored to the list of salables by the discovery of forty-six additional volumes.

Outing committee reported unsatisfactory weather, a late, cold, wet spring.

Publication committee reported that future BULLETINS will be printed by The New Era Printing Co., of Lancaster, Pa. The April number is in the hands of this company.

Mr. Weeks read his correspondence on the subject of a state appropriation of $50,000 to fight the brown-tail moth, including replies from Dr. E. P. Felt, New York state entomologist, and Dr. L. O. Howard, government entomologist. The pest is fairly well established at Orient Point, Fisher's Island and elsewhere, and prompt steps are being taken to fight it now rather than wait until the damage gets into the millions.

Mr. Corbin then showed a bottle of live beetles sent from Texas City by Lieut. Grant, formerly assistant at the Children's Museum. They contained *Trox scutellaris* and *T. punctatus,* a *Centriopteron* and a big, lumbering *Eleodes suturalis texanus.*

The regular meeting of the Brooklyn Entomological Society was held at 185 Brooklyn Ave., May 14, called to order by President Davis. Present also thirteen members and two visitors.

Report of the treasurer, showing society balance of $434.07 and BULLETIN account balance $16.74, was read by the secretary. The librarian reported at length on the state of the old publications which the society has for sale. Sales have included every item listed, with a steady demand for J. B. Smith's Glossary of Entomological Terms. The editor for the Publication Committee reported at length on the progress of the BULLETIN, for which new subscriptions are coming in steadily, but which needs the personal interest of every member to make it an unqualified success.

There was ordered to be spread on the minutes the fact of the death of John A. Grossbeck, Assistant in Invertebrate Zoölogy in the American Museum of Natural History, which occurred in the Barbados, April 8. Mr. Grossbeck was a former member of the Brooklyn Society and always responded liberally to calls for entomological demonstrations. In company with the secretary of that society he made his first visit to the tropics three years ago, going to Jamaica and collecting with a zeal and judgment which brought him a high degree of commendation from his superiors. The secretary was instructed to write to Mrs. Grossbeck conveying the society's sympathy and best wishes.

Mr. Engelhardt spoke of collecting experiences early in May at Yaphank, L. I., and near Tuxedo, N. Y. The black flies were exceedingly annoying at both places. The species were *Simuleum venustum* Say and *S. invenustum* Walk. Splendid results in Lepidoptera especially were obtained in both places from the pussy willow bloom and at sugar. At least twenty species of Noctuidae were taken, mostly species not taken commonly at any other season.

Mr. Davis spoke on the Cicindelidae of Long Island, of which seventeen species and two varieties are listed by him in actual captures. This does not include the form *nigrita* Davis. *Unipunctata* is represented only by specimens reported by Schaupp in BULLETIN, Vol. I, p. 28, from Washington Park. *C. abdominalis* from the east end of the island is Mr. Davis' latest discovery. *Tetracha virginica* is included from Mr. Davis' happy capture at Hemstead. *C. consentanea* was reported in numbers by W. C.

Wood from Huntington, also in places on the south side of the island. Mr. Davis had prepared elaborate maps showing the distribution of the principal species over the island.

Mr. Dow reported that *C. marginata* occurred in enormous numbers around the mud flats, Rockaway Beach, about September 1, and that *C. repanda* dated from March 28 on the sands of Bergen Beach.

Mr. Weeks spoke on the capture of *Leptura emarginata,* the first specimen at Yaphank in 1860, another in 1894. Both were taken from the black oak trees, which had been partially cut and bent over to make fences. It was pointed out that Mr. Joutel has bred this species from Ft. Lee, N. J. Mr. Weeks also showed a box of beetles taken in his garden at Yaphank. Specimens of *Cychrus elevatus* were quite black and like some more southerly ones, some from Cape May Co., N. J. Most Long Island specimens are more or less violet tinted.

Mr. Pearsall mentioned taking *Elater sayi* in Brooklyn, presumably the first positive record from Long Island.

R. P. Dow, *Secretary.*

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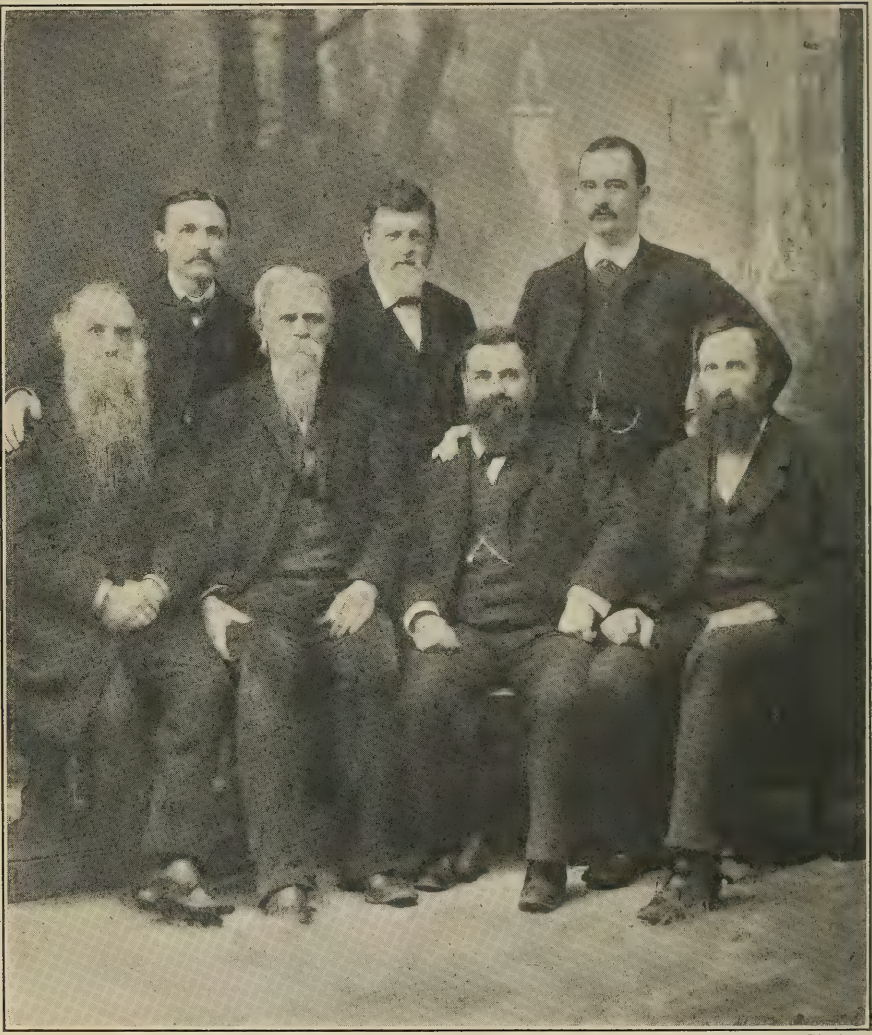

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THE DEVELOPMENT OF CALIFORNIA ENTOMOLOGY.

By Fordyce Grinnell, Jr., Pasadena, Cal.

Robert E. Cowan, of Oakland, an appreciative student of Californian history, says somewhere: "In the annals of recorded history, ancient or modern, there is perhaps no section or territory that in its growth and development presents so many remarkable features as does that of California, whose entire history is almost a unique annals of romance and reality." It would only be necessary to read Willard's History of Los Angeles, or McGroarty's California, Its History and Romance, to convince anyone of the above statement of Cowan. The development of Californian science is no exception. I have always been very much interested in its early naturalists, maybe because I became acquainted with one of the greatest, the late Dr. Behr, and some others, Harford, Wright, Rivers, Fuchs, and more.

> "Sun, friend and flower have each become
> A part of my immortal part;
> They are not lost, but evermore
> Shine, live, and bloom within my heart."

Looking back over a long period of years, the important features stand out and we can properly judge their place in history; so with science in California, this history may be divided into four or five quite distinct periods, as Brewer did in the second volume of the Botany of California, and others:

1791–1848 coincides with the Spanish-Colonial period in California.

1849–1859, Mexican boundary survey and Pacific Railroad survey; the gold period.

1860–1870, the State Geological Survey.

1870–1890, following the opening of the transcontinental railroads.

1890 to the present—the period of the two large Universities.

During the first period several early voyages of adventure took place, and on most of them natural history specimens were collected, chiefly botanical, but including a few insects. The Russians, especially, were quite active and in their progress southward along the coast from Siberia and Alaska, they did much to advance the knowledge of the natural history of the regions. In California several posts, partly fur trading and partly military, were established, chiefly in Sonoma County, where several Russian naturalists collected. Fischer collected in the Aleutian Islands, chiefly Coleoptera; Eschscholtz, Chamisso, Mannerheim, Maeklin and Motschulsky all collected insects, mostly beetles. The Russian-American Fur Co. was at Bodega in 1820; and in that year Ft. Ross on the Russian River was established. Wrangel and Wosnessensky were here. Dr. Wosnessensky was on Mt. St. Helena, June 12, 1841; he collected plants and insects. The butterflies were described by Menétriès, a Russian entomologist; the western dog's head butterfly was first named *wosnesenski** for him, and there are others collected by this naturalist.

In 1816 J. F. Eschscholtz and Adalbert von Chamisso accompanied Captain Kotzebue in the brig "Rurik," on an expedition around the world; they landed in October at San Francisco and on the Yerba Buena Island; among the beetles and other insects collected were a few butterflies, one of them, *Melitæa chalcedon.*† Dr. Behr told me he saw the type in the Berlin Museum, where the collections were placed. The party visited also San Jose and Monterey. The California poppy was named in honor of

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* This well-known species is generally listed now as *eurydice* Boisduval, 1855. He later redescribed it as *lorquini*. Reakirt tried to establish a variety, *helena*, which has fallen into the synonymy.

† One wonders at the lapse of years until this species was named by Doubleday and Hewitson.

Eschscholtz by Chamisso. Eschscholtz was here again in 1824. Theodore Hartweg* was at Monterey in 1846–1847.

While the Russians working down the coast barely reached San Francisco Bay, the Spanish were working up and reached the same point. But there were no naturalists in the Spanish invasion; their interest was in establishing missions.

The period from 1849 to 1859 saw an immense immigration of all sorts and conditions of men, seeking gold. Not a few naturalists were among them. P. J. M. Lorquin was about the first to arrive in 1849 from France. He had previous experience in collecting in France and Algeria, and was well acquainted with Boisduval, the noted French coleopterist, and when he came to California he collected enthusiastically for Boisduval, as may be seen from the latter's 1852 paper, the classic in California entomology. Lorquin was in the State until 1859, when he left for China. He collected through the whole length of the State, coming to Los Angeles and San Diego by land and returning to San Francisco by water. Hans Herman Behr came to San Francisco in 1851, and lived there until his death in 1904. He was the greatest of the pioneer entomologists, as well as a botanist. He described quite a number of our butterflies and moths.

The California Academy of Sciences, the oldest scientific society in the State, was founded April 4, 1853, by six men; and until about 1890 was the center of scientific activity in California. Among the early members in the fifties were: George W. Dunn,† James Behrens,‡ H. H. Behr,§ Lorquin.¶ Most of Behr's contributions to the Lepidoptera were published in the early proceedings, and those of Henry Edwards in the seventies.

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* The checklist of Coleoptera makes one allusion to this traveler,—6167 *Trichoxys hartwegii* White.

† Beetles have been named for Dunn by Professor Rivers and Colonel Casey. He was a genial soul, always "on his uppers," who collected insects, plants, shells, anything else he could sell. Like Micawber, he waited for something to turn up. He died in 1905 at the almshouse in San Francisco, at an age well above 90.

‡ Long life also was given to Behrens. Beetles were named for him by Mannerheim, Leconte, Horn and Candèze. Types of Lepidoptera were named for him by Hulst, Packard, Chambers, Grote, Edwards, Stretch, and John B. Smith. He died in San Jose in 1897. Some years previously he shipped his personal collection to his native Lubeck, in Germany, where it now is.

§ Lepidoptera are named for Behr by Stretch, Edwards and Smith. He lived well beyond 80 years.

¶ One well known Cerambycid bears Lorquin's name. His lepidopterous discoveries are recorded by Boisduval, Guenée, Grote & Robinson, and Behr.

On April 21, 1860, Governor J. G. Downey approved "an act to create the office of State Geologist, and to define the duties thereof." J. D. Whitney* was appointed Geologist, with the following assistants: W. H. Brewer,† J. G. Cooper,‡ W. M. Gabb,§ William Ashburner, Chester Averill, Charles Hoffmann and Clarence King. Most of these men collected a great many Lepidoptera and Coleoptera in different parts of California, which were described by Dr. Behr and other specialists; the names of most of these men are familiar to us in the names of well known and interesting insects and other animals.

The fourth period, from 1870 to 1890, showed a great increase in students and work, due to the opening of the transcontinental railroad. Henry Edwards, the most conspicuous person during the period, did a vast amount of collecting in all parts of the State and published accordingly; he was an actor by profession, and a prominent member of the Bohemian Club, as was also Dr. Behr. R. H. Stretch, author of "Zygænidæ and Bombycidæ of North America," 1872, was a mining engineer of considerable ability, and collected, as chance offered, in various parts of the State. G. R. Crotch, an Englishman and a Coleopterist, came in 1872 and collected all over the coast from southern California to British Columbia; he exposed himself to such an extent in his field work that he contracted pneumonia and died soon after his return to the east; he was especially a student of Buprestidæ and Coccinellidæ. H. K. Morrison in the early eighties collected considerably in southern California in all orders. Tryon Reakirt collected about Los Angeles and in northern California, but his published work was careless and his labeling deficient; he got certain things from Lorquin the younger, who got his material badly mixed, and a lot of trouble was caused in that way. O. T. Baron* did a good amount of work in Mendocino and Fresno counties, the species being described by W. H. Edwards, Henry Edwards, and others; he returned to Germany about 1890. Xantus de Vesey† in the seventies did considerable collecting at Ft. Tejon and in Baja California, the Lepidoptera going to Dr. Behr; Leconte published a list of the Coleoptera collected by him at Ft. Tejon. Lord Walsingham in 1871–1872 made an extended trip through the whole length of the State, collecting Microlepidoptera; he published a fine illustrated work on the Pterophoridæ of California and Oregon; he is still living and working in England (where he is honorary curator of Microlepidoptera in the British Museum).

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* Entomologists have not forgotten Whitney. Vide *Catocala whitneyi* Dodge and *Lemonias whitneyi* Behr.

† Compare *Corymbites breweri* Horn.

‡ Dr. Cooper was a companion of Dr. Leconte on the Pacific expedition fifteen years earlier. *Cantharis cooperi* is for him, also lepidopterous species named by Behr.

§ A close friend, in fact the closest, of Dr. George H. Horn. He left Philadelphia to take this position, making a specialty of Palæontology. *Cicindela gabbii* is one of his monuments.

Other important collectors during the period were: Dr. Geo. H. Horn, Baron Terloot de Popelaire,‡ A. J. Grayson, T. L. Mead,§ Samuel Brennan, Jr., Baron R. von Osten Sacken, James Behrens, J. J. Rivers, W. G. Wright,¶ Charles Fuchs, Colonel Thomas L. Casey. By the end of the eighties we notice that most of the older students had finished their work, and many also were leaving the State; during this period also the Lepidoptera was the order which received most attention, while after 1890 has been the period of the Coleoptera. Stanford University had just opened and the University of California began a more vigorous growth, and science centered more around these universities than in the preceding periods, when the California Academy of Sciences was the center of work.

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* *Amblychila baroni*, now a super, rather than a subspecies, records his greatest claim to fame.

† John Xantus was living in Kansas when Leconte first met him, about 1852. In his later home near Cape St. Lucas, Lower California, he devoted his leisure wholly to beetles. He entertained Crotch and was greatly revered by both Leconte and Horn.

‡ This visitor is represented by name in both beetles and butterflies.

§ Mr. Mead has ten Lepidoptera named for him.

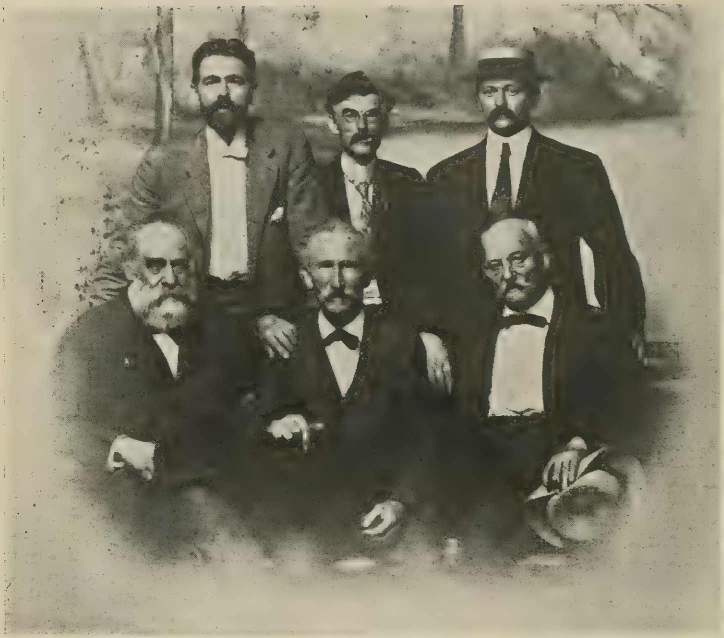
¶ Very few collectors are without specimens taken by this diligent worker whose death occurred less than two years ago. His "Butterflies of the Pacific Coast" is a classic. Nevertheless he may be remembered longest in science by the anomalous *Dinapate wrightii*, which he discovered and sent to Dr. Horn.

NOTE: The footnotes to Mr. Grinnell's fine paper are by the Editor.

The pioneers did a lot of work; the period from 1870 to 1890 probably will never be equalled for activity, but nevertheless it was only a beginning; we have a lot to find out yet.

About 1888, when Lieutenant Thomas L. Casey, now Colonel Casey, retired, was detailed to California for some engineering work, he took active part in the San Francisco Academy of Sciences. One day he induced a group of local entomologists to visit a photograph gallery, the result of which is given in Plate III. of this number. Colonel Casey mislaid his copy of the photograph many years ago. Albert Koebele, the veteran collector, gave his copy to C. F. McGlashan, himself a collector of over thirty years' experience at Truckee, Cal. It was then published in the Butterfly Farmer, March, 1914. It includes the foremost Californian entomologists of that time.

Professor John James Rivers, an Englishman, came to Kansas about 1870, thence to the University of California to become Curator of Organic Natural History. He retired in 1895, but continued active as an amateur, dying in Santa Monica, 1913, within a few days of his ninetieth birthday. His hobby was Coleoptera. Albert Koebele, while not a youngster, is still active and will always be best known by his collections for the United States National Museum. Carl Fuchs anglicised his name as Charles. He was known to every prominent beetle collector in the world. His synopsis of the Lucanidæ has not been superseded in forty years. His first appearance in nomenclature was for a Staphylinid named by G. Kraatz. He unearthed the strange little creature which Dr. Horn called *Ægialites fuchsii* and thereafter devoted considerable time each year to collecting it to be given with his compliments to Coleopterists all over the world. The checklist contains another little species, *Scydmænus mariæ* Lec. This is named for Mrs. Fuchs, whose hospitality no one ever forgets. Charles Fuchs never worked for money. He worked hard, the first mortgage on his earnings going for sustenance, but all beyond that going for entomology. On his arrival in California,



R. P. DOW CHAS. SCHAEFFER GEO. P. ENGELHARDT
CHAS. FUCHS JACOB DOLL GEO. FRANCK

after leaving Brooklyn, he accepted a position with the University of California. Later he became Curator of Entomology of the Academy of Sciences. His private collection, the work of ten hours a day for sixty years, was lost in the San Francisco fire. He started a new one the next day. After thirty years' absence he revisited Brooklyn. It was then that the editor met him. He had never seen a moving picture. We took him twice a day to the "movies." Coney Island was the best place for them. Plate IV. is the outcome of a visit to that region. All the afternoon and evening we mingled movies and beetle collecting under the arc lights. After all the years many of the commonest insects were strange to Fuchs. So we took everything. At each capture Carl Fuchs would dip anew into a box of a particularly savory snuff, of a kind known only to himself. It had a delicious aroma, even if it did force a sneeze to all us amateurs.

Professor W. G. W. Harford was born in Rochester, N. Y., in 1825. *Colias harfordi* Hy. Edwards recalls him. He was for several years Director of the San Francisco Academy of Sciences, then for four years connected with the University. He lived until 1913. Verily, if one desires longevity, he should become an entomologist in California.

Explanation of Plate IV.

Beginning upper row: Geo. P. Engelhardt, curator of invertebrates, museum, Brooklyn Institute of Arts and Sciences. Chas. Schaeffer, associate curator of entomology, museum, Brooklyn Institute of Arts and Sciences. R. P. Dow, secretary and editor Bulletin, Brooklyn Entomological Society. Geo. Franck, curator, Brooklyn Entomological Society. Jacob Doll, curator of entomology, museum, Brooklyn Institute of Arts and Sciences. Chas. Fuchs, charter (recently corresponding) member of the Brooklyn Entomological Society.

RECOLLECTIONS OF CHARLES FUCHS.

By Charles W. Leng, B.S.

I think it was in 1876 that I first met Charles Fuchs, in Schaupp's room, at the foot of Broadway, Williamsburg; that was thirty-eight years ago and Fuchs was then in his prime, massive in figure, heavily bearded, strong and alert, German in his speech by preference and already famous locally for his large collection of Coleoptera, especially in the families Scarabæidæ and Lucanidæ. The first meeting was followed as soon as decency permitted by a call at his home on the top floor of a building in Bond Street, New York. There Fuchs maintained an establishment for engraving gold jewelry for the trade, with several workmen besides himself in a back room; each with a huge ball of beeswax into which the work to be engraved was sunken. His living apartments were in the front of the house and there I met Mrs. Fuchs, whose hospitality has been recorded by Walther Horn in Deutsche Entomologische Zeitschrift, and the parrot and pet dog that otherwise composed the family. Mrs. Fuchs was occupied in cleaning part of the collection of *Trox* with a tooth brush and warm water, the specimens being set, like the gold jewelry in the back room, in balls of beeswax.* In those rooms I first saw specimens of *Plusiotis* and other large and handsome Scarabæidæ, and as a gift from Fuchs obtained my first *Donacia* and his instructions in collecting members of the genus. Each box as it was opened displayed more and more wonderful creatures and far too soon, according to my idea, the boxes were closed and an adjournment taken to "Papa" Bornhagen's saloon, on the ground floor, where a choice table near a back window seemed to be reserved for Fuchs as a constant and honored visitor.

Thereafter for a few years I met Fuchs frequently, but he was at least twenty years my senior and the relation was that of a boyish collector bringing his captures to be named. We never went afield together but once. Fuchs must have been a diligent collector before I knew him, for he had great quantities of local insects and a fund of information as to their habits, but by the time I knew them, few of the elderly members of the Brooklyn Entomological Society went out frequently. They bought their material from collectors like Morrison and Belfrage, and depended for specimens to fill up their series of desirable local species upon youngsters like myself who brought in their captures to be named. The one occasion upon which I remember Fuchs in the field was at Clifton, N. J., when lunch time arrived soon after we had reached the collecting grounds and the sad news was broken that the only fluid obtainable was water. The disgust and grief of Fuchs were extreme, but short-lived, for his thoughtful spouse had taken the precaution before leaving home of attaching a number of bottles containing his favorite liquid refreshment by cords to a belt about her waist, the whole arrangement having been concealed until the critical moment, by the ample folds in her frock.

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* These much bebeeswaxed and betoothbrushed specimens never went into the scientifically perfect collection of Mr. Fuchs. Later Mrs. Fuchs developed great skill in preparing specimens.

The connection of Fuchs with the Brooklyn Entomological Society in its early years and with the publication of the first volume of the BULLETIN was important and of the greatest value to the Society. In view of the small number of articles that are signed with his name, the part that he took in establishing the BULLETIN is not self-evident, but to those whose memory runs back far enough, it is well known that it was his enthusiasm and business capacity that supplied much of its successful inception and vigorous growth. Schaupp was the editor and partly the author of the papers on Coleoptera. Graef and Tepper supplied the papers on Lepidoptera. Schmelter and Gissler supplied shorter papers on their own specialties. Merkel may have occasionally supplied financial assistance and Luetgens the bibliography and the wholesome criticism that was often necessary. Fuchs throughout those early years helped Schaupp with everything that he was attempting, supplied in the person of his relative Gustav Fuchs, a recording secretary for the Society, and injected into all the proceedings a hopeful enthusiasm that was contagious. Eight in all, all Germans, worked at the making of the first volume of the BULLETIN, each strong in his own department, and all encouraged and pushed forward by the buoyant nature of Charles Fuchs.

I think it was in 1884 that Fuchs went to San Francisco via Panama and soon after his arrival there his friends in the east began to receive splendid consignments of California beetles. The beauty of his workmanship, especially in connection with the smaller specimens that were mounted on points, was remarkable in view of his bulk and apparent heaviness of touch. No one ever received a specimen from him that was not absolutely perfect. It was about this time that he began to make his collection of the genera of the whole world, trying to get at least one specimen to exhibit the characters of the genus. His correspondence is filled with allusions to this, his favorite topic, which in the sixties he attacked with the enthusiasm of a boy. As a correspondent he was curiously irregular, months or even years passing sometimes without a reply to a letter, but the spirit of helpfulness was always present. When I was writing my paper on Cicindelidæ I had the choicest part of Fuchs' collection in my hands, including all his *Omus* and all the *Omus* he could borrow, besides the types of Schaupp's species, which by that time had passed into his possession. One had only to ask and if he had the specimen wanted or could get it, Fuchs would always prove a willing friend.

Only once in his later life did I see him personally, when about ten years ago he re-visited New York. The meeting was in the Imperial Hotel, on Fulton Street, Brooklyn, N. Y., and the great German, with his bushy hair and beard grizzled with age, put his arms about my neck and embraced the one who was a boy when he left New York. All who were present at that meeting will recall the boyish enthusiasm that made the old man so remarkable. Years had brought no noticeable slackening of the pace, no hesitation in action, speech or thought; except for the gray hair it was the same Fuchs that had been a leader among the founders of the Brooklyn Entomological Society. Tears, it is true, came to his eyes, as we recalled the names of those who had passed away, but they did not stay long, for his thoughts were not in the past but looking forward to the years to come and the things that he still hoped to accomplish. He was a man of unusual vitality and personal magnetism, to whom hope and content were given in the fullest measure.

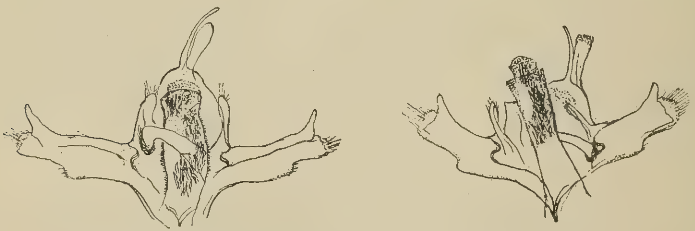
SHORT STUDIES IN GEOMETRIDÆ.

By Richard F. Pearsall, Brooklyn, N. Y.

(Gypsochroa designata Huf.)—The genus *Gypsochroa* Hub. is not applicable to any group of Hydriomenæ, as already noted by Mr. Prout (Genera Ins., Fasc., 104 p. 71), where he places it in the subfamily Œnochrominæ. Its type, the only species under it, is a native of southwestern Russia. The species under consideration (Dyar's List 3438) together with *Hydriomena intermediata* Guen., *salvata* Pears. and perhaps others, having the short denticles of the antennæ tipped with fascicles of ciliæ, must, if genitalic likeness is to be considered, form a distinct generic group. Just what genus it may be I cannot now determine, possibly some of the older European genera having *designata,* or an allied species for its type, may be found to cover all of them; so my use of the term Gypsochroa is merely tentative. Our species is well known. In the Catskill Mt. region it is double brooded, the first imagos from overwintering pupæ appearing from May 15 to June 10, and the second brood in July and early August. My observations lead me to believe that the first brood feeds upon the tender spring growth of the hemlock, and in the late summer (Aug. 21, 1906) I took a single larva upon it, which was reared to the imago. But the hemlock at this season becomes tough and wiry, and evidently is not relished, for I found many larvæ of the second brood had taken kindly to my flower border of sweet alyssum (*A. maritimum*). In this region killing frosts early in September sweep off such tender vegetation but some of my hardier plants survived, and larvæ fed on them as late as October 10. I secured and reared some of these, and the following spring twenty-one imagos were disclosed, of which eight were males. Eleven more males, captured in various years, in the open woodland or at light, some in May, others in July, make a total of nineteen out of sixty-eight specimens before me—about one quarter of the entire series. A study of these males disclosed the remarkable fact that nine of them, or about one half, were furnished with female antennæ, and upon farther examination of the genitalia, it was discovered that, as compared with the normal males, these organs were a mass of minute parts in some cases, greatly distorted but without trace of the female organism, so far as I could perceive. Hence I conclude that such examples are true gynandromorphs, and apparently are quite incapable of reproduction. It is within reason to suppose that such aberrations may occur in other species, and because of this many of our ablest systematic workers have been led to regard antennal structure as not to be relied upon for generic separation. In this view I have never concurred for freaks occur even in the highest order of mammalia, without disturbing the status of its type. Still another unexpected outcome of my investigation proves that our American species is not the *designata* of Hufnagel.

Again through the helpfulness of Mr. Prout I was supplied with the typical males of the forms of this European species, for it seems that, beside the pink-banded form first described, their other and more common form resembles in coloration our *intermediata* Guen. I quote Mr. Prout in a recent letter: " The clear, cherry red form with little black markings in the outer half of the band, such as I found common at Toronto, and have received from Maine is quite rare with us. Indeed, I have only one from near London, which really matches them. I send you one fairly bright and clear, taken at Epping Forest, near London, and two of the common forms (Essex and Germany)."

The genitalic differences between these European forms do not seem great, but as compared with our own, of which I have made many mounts, there is a decided and constant difference in the shape of the chief determining parts, so much as to force me to the conclusion that, called originally *designata* because of its resemblance thereto, we have in reality another species in our fauna, very constant in its coloring of gray, with central band of bright Dutch pink, while the European pink form clings to the brownish hue of its ally.



Right: (*Gypsochroa?*) *emendata* n. sp. America.
Left: (*Gypsochroa?*) *designata* Huf. Europe.

As long ago as 1857, Guenèe (Spec. gen. X. p. 413) placed it apart as his var. A, and calls attention to the fact that the discal point is not present, and this is borne out by my entire series. As he had but one male before him, he did not venture to give it a name. I propose for our species the name (*Gypsochroa*) *emendata* and for the males with female antennæ, form *gynandrata*. The accompanying figures of the ♂ genitalia illustrate the differences I have mentioned.

It must not be assumed that my endeavor is to detach every one of our American species from its old name. If genitalic differences led to such conclusion, I should be ready to doubt their availability. But they do not. As a case in point I may cite *Hydria undulata* Linn. I have examples of it from England and from Bohemia, and there is absolutely no difference between these and American specimens in form, venation, markings, color variation, or in genitalia! To the systematist there is a real satisfaction, but where the parent stock of the species sprang, why its wide distribution has not changed it in the least, as appears to have resulted in so many other forms, are problems for the evolutionist to solve.

NEW NEOTROPICAL HETEROPTERA.

By J. R. de la Torre-Bueno, White Plains, N. Y.

Rutuba[*] gen. nov.:

Head shorter than thorax, anteocular part seen from the side equal to the postocular; antenniferous tubercles apically spined. First joint of the antennæ more than twice as long as the anteocular part of the head, beneath unarmed; first joint half as long as the second. Thorax longer than broad at the base, narrowing sensibly anteriorly, anterior angles armed with a long spine. Anterior femora armed exteriorly beneath with four long spines, the three shorter ones furcate and the longest simple, long, at apex of femora, and a number of smaller spines; interiorly toward the apex armed with a very long spine. Anterior tibiæ one fourth shorter than femora, beneath interiorly with two long spines and exteriorly with three. Last abdominal segment in the males produced into two laterally diverging long spines.

This genus is near *Pnirontis* Stål.

[*] A gladiator of that name.

Type: *Rutuba perpugnax* Bueno.
Distribution: British Guiana.

Rutuba perpugnax sp. nov.

Head including genal spine twice as long as broad at the eyes which are globose and set midway of the head. Ocelli nearly contiguous to the eyes and centrally behind them. Antenniferous tubercles with a sharp semi-erect spine pointing forward. Antennæ setose beneath; third joint shortest, one-third as long as fourth; second joint longest, longer than the head, but shorter than the head and first joint taken together. First joint longer than the head, with a long apical spine. Prothorax narrowing anteriorly, three times as long as wide anteriorly, less than one-third longer than wide at base, armed with a small blunt spine slightly above basal angle, and another longer about one-third from the base; base slightly sinuate. Scutellum longer than wide at base, tumid, sides slightly rounded. Wings as wide as abdomen, semi-membranous throughout, leaving two-thirds of the last abdominal segment exposed; membrane with three simple longitudinal nervures. Abdomen five times as long, including the spines, as broad, subparallel, basal angle of abdominal segments one to four produced into a small black spine; fifth segment into a long pointed outwardly diverging spine; sixth segment produced into two long acute spines, two-thirds as long as the body of the segment, first to fourth segments keeled. Middle pair of legs shortest, femora and tibiæ simple in second and third pair. First pair spined, as in generic description.

Dimensions: Head, long. 4 mm. with genal spines; lat. 2 mm. with eyes. Prothorax, long. 4.5 mm., lat. at base 3.5 mm.; anterior margin, 1.5 mm. Scutellum, long. 1.5 mm.; lat. 1.25 mm. Abdomen, long. 17 mm.; lat. 3.5 mm. Total length, 2.5 mm., greatest width, 3.5 mm.

Described from one ♂ from Tumatumari, Rio Potaro, British Guiana, taken in April by J. M. Geddes.

Achillas[*] gen. nov.

Head little more than half as long as thorax, anteocular part shorter than postocular, which is furnished with setigerous spines

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[*] The murderer of Pompey.

beneath. First joint of antennæ subequal to length of head, armed with a few small spines. Thorax longer than broad at base, much narrowed anteriorly, spinose at the edges. Anterior femora armed with short spines above and beneath; posterior simple; intermediate and posterior tibiæ simple. Abdominal segments one to six ampliated near basal angle into foliaceous spined lobes; spined on the connexival edge.

This genus is somewhat obscure but it is Stenopodine in its general facies and characters, and comes near *Seridentus* Osborne, from which the foliaceous lobes at the basal angle of the abdominal segments and the other characters given abundantly separate it.

Type: *Achillas bicaudatus* Bueno.

Distribution: British Guiana.

Achillas bicaudatus sp. nov.

Head one-fifth longer than broad including the eyes, which are globose and prominent, situated nearer the base than the front. Ocelli nearer to the eyes than to each other, not prominent. Front with two short spines directed anteriorly; head beneath with three pairs of short simple setose spines, of which the postocular pair is the longest, and that under the eyes the shortest. The upper surface of the head is thickly set with an abundance of short spines. Antennæ: first joint stoutest, shorter than second, set with short setigerous spines; second joint longest, subequal to first joint and head taken together; third joint shortest, fourth about one half longer; third and fourth joints taken together a little more than half as long as second, and shorter than first. Prothorax narrowing anteriorly, over four times as long as wide anteriorly and nearly four times as wide at the base as anteriorly, slightly sinuately, constricted about the middle and covered with short spines, a few of those along the margins longer than the others; base rounded.

Scutellum nearly parallel sinuately sided, abruptly coming to a blunt semi-erect point, slightly tumid. Wings slightly narrower than abdomen, leaving the foliaceous lobes exposed. Abdomen four and a third times as long, including the lobes, as broad, narrowing posteriorly, the sixth segment branching into two broad flaring mucronate lobes. At the basal angle of each abdominal segment is an outwardly extending foliaceous lobe, nearly one-third the width of the segment on two to five, very small on one and broadened extremely on six, to a broad mucronate lamellar expansion 4 mm. from tip to tip. Between the lobes on the connexival edge are three to four short stout spines and the posterior edges of the last expansion are serrate. The smaller lobes are irregular in outline, longer than broad and with two or three points on each. Abdominal segments one and two keeled, three evanescently so. Third pair of legs longest, simple, femora setose, tibiæ with a few short, black spines exteriorly, longer than femora. Second pair longer than the first; femora with a single row of spines above, and two beneath, tibiæ with an external row of small black spines; first pair shortest, femora and tibiæ equal, femora much stouter than in the others, armed with one row of strong spines beneath and one above, tibiæ simple, as the others.

Dimensions: Head, long. 2.3 mm.; lat. 1.9 mm., including eyes. Prothorax, long. 3.5 mm.; lat. ant., .8 mm., post. 3 mm. Scutellum, long. 1.2 mm., lat. 1 mm. Abdomen, long., including lobes, 1.3 mm.; lat. 3 mm. at widest part, 4.4 mm. at lobes. Total length, 18.8 mm., greatest width, 3 mm.

Described from one ♂ from the same locality and collector.

Eurylochus* gen. nov.

Head short, not produced beyond eyes, which are large and prominently rounded and occupy nearly the whole head seen from the side. Antennæ moderately long, first joint stoutest and curved, third and fourth filiform. Pronotum tumid, narrowing anteriorly, with an irregular process at the anterior angles branching outward. Scutellum spined. Abdomen wider than hemelytra and somewhat hollowed, beneath keeled. Legs simple. Prosternum excavate and enclosed by two lamellar processes.

This genus is near *Veseris* Stål, from which it differs by absence of spongy fossæ on the anterior tibiæ, by the long second joint of the antennæ and by the lateral processes to the excavate prosternum.

Type: *Eurylochus bellator* Bueno.

Distribution: British Guiana.

---

* The only one of the companions of Ulysses that withstood Circe's magic cup.

Eurylochus bellator sp. nov.

Head with eyes about one-half broader than long, subequal to width of anterior margin of thorax, including the processes. Eyes large, globose, prominent, distance between them equal to the breadth of one eye; seen from side they occupy nearly the entire lateral part of the head. Ocelli situated back of the impressed line running from eye to eye. Median deep impression on vertex meeting the transverse impression. Antennæ slender. First joint stoutest, curved, rugulose longitudinally; second joint pilose, slenderer than the first and five times as long; third and fourth joints filiform, pilose, fourth shortest. Rostrum moderately stout, curved, reaching middle of prosternum in the excavation. Pronotum about one half shorter than broad at the base, which is rounded, more than twice as broad posteriorly as anteriorly. Anterior angles provided with peculiar, blunt, somewhat irregular outwardly directed processes. Posterior angles spined, spines directed more or less posteriorly. Scutellum twice as broad at base as long, including the black semi-erect spine at apex. Abdomen wider than hemelytra and hollowed, margin entire, with a blunt keel beneath, not quite twice as long as broad. Hemelytra reaching or slightly surpassing abdomen; membrane large. Legs simple; femora postapically annulate with black; tibiæ black except the basal fifth. Connexival edge with a black line at each suture, from which spring two branching lines. Upper part of insect speckled and mottled irregularly with brown and black. Meso- and metathorax black, rugulose; middle pale patch on both. Abdomen pale with a black mark at each segment at the connexivum and a row of black spots one on the anterior edge of each segment midway between the keel and the edge of the connexivum. Genital segment black.

Measurements: Head, long. 1.8 mm.; lat. 2.5 mm. Thorax, long. 3.4 mm.; lat. ant. 2.5 (including processes); post. 5.5 mm. to 5.9 mm. (excluding spines). Scutellum, long. 2 mm. (including spine); lat. 4 mm. Abdomen from base of thorax, long. 11 mm., 11.5 mm., 12 mm.; lat. 6 mm., 6 mm., 6.4 mm. Total length of insect: 16.2 mm. to 17.2 mm.; greatest width (abdomen) 6 mm. to 6.4 mm.

Types: Three ♂♂ from Tumatumari, Rio Potaro, British Guiana, J. M. Geddes, collector.*

Mr. Edward L. Graef, in his very interesting article entitled "Some Early Brooklyn Entomologists" published in the June (1914) number of the Bulletin, refers to the plates of the Sphingidæ gotten out by J. C. Weidenmeyer, S. Calverley and W. H. Edwards. Mr. Edwards owned fourteen copies of these plates and in 1903 sold them to the American Entomological Society. There were 27 plates, each set illustrating 132 figures. This Society thought them of sufficient importance to publish the fourteen sets. They were edited by myself and all were sold, excepting the one colored set, which was retained by the Society. The history of the plates is given in the published work. The American Museum of Natural History and Cornell University also possess colored sets. The Brooklyn Institute of Arts and Sciences owns 25 to 30 sets, two of which are colored. Henry Skinner, M.D., Sc.D.

The duplicate sets belonging to the Brooklyn Institute have since been offered for exchange with the other museums of the world.—Ed.

A butterfly, *Colias eurytheme,* was observed July 15, 1914, flying up Carroll Street, Brooklyn, and alighting in the grass. The specimen was a female and perfectly fresh. It was noted at the time that the flight of the creature was different from its congener, *C. philodice,* the wing surface being larger, more fragile and beating the air more slowly. Previous Long Island records are few.

---

* An account by Mr. Geddes of his own collecting is to be found in the Bulletin, Vol. VIII., pp. 118 et seq.

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The collection of the late G. W. Kirkaldy has come into my hands. From his letters to me it would appear that there is loaned material contained therein. If the lenders will communicate with me, I shall return such of this loaned material as may still be in existence. J. R. de la Torre Bueno, 14 Dusenbury Place, White Plains, N. Y.

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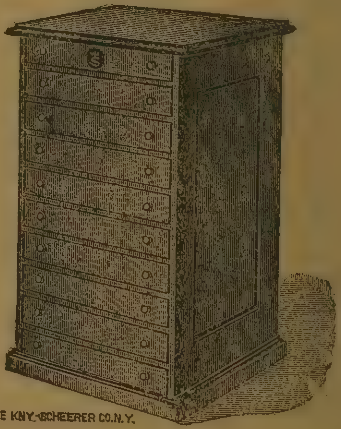
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BULLETIN
OF THE
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VOL. IX DECEMBER, 1914 No. 5

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NOTES ON THE GENUS RHODITES WITH DESCRIPTIONS OF NEW SPECIES.

BY WILLIAM BEUTENMULLER, New York.

Rhodites gracilis Ashm. Pl. V, fig. 10.

Hitherto this species has been known only by the types in the collection of the United States National Museum, and the habitat unknown. Mr. Lewis H. Weld collected the galls on *Rosa lucida* or *R. blanda* at Evanston, Ill., and Mr. A. Cosens took it at Toronto, Canada, on *Rosa blanda*. The gall occurs on the leaves, sometimes covering the entire surface.

Rhodites mayeri Schl.

A single specimen of a gall of this European species was collected by the late John B. Smith in a nursery at New Brunswick, N. J., on a species of cultivated rose. The specimen was given to me, and from it a single female emerged in May. The New Jersey specimen agrees with that of *R. mayeri* from the Crimea, Europe, in the U. S. Nat. Museum. This is the first record of *mayeri* found in North America.

Rhodites fulgens Gill.

Mr. Lewis H. Weld collected the galls of this species in Illinois on the roots of *Rosa rugosa*. Hitherto not recorded from this State. Dr. E. B. Southwick also collected it on Staten Island, N. Y.

Rhodites nodulosus Beutm. Pl. V, figs. 1–5.

This species was described in Entomological News, vol. x., 1909, p. 247, and the gall is found on *Rosa humilis*. The galls are here figured for the first time. They were collected by Miss Cora H. Clarke at Magnolia, Mass.

Rhodites fusiformans Ashm. Pl. V, figs. 6–8.

The galls of this species were taken by Mr. Lewis H. Weld at Evanston, Ill., and by Mr. A. Cosens, Toronto, Can. Hitherto the species has been known only from Colorado.

Rhodites verna O. S. Pl. V, fig. 9.

The galls here figured were drawn from the types in the Museum of Comparative Zoology at Cambridge, Mass., and it is possible that *R. nodulosus* will prove to be the same as *R. verna*.

Rhodites californicus sp. nov. Pl. V, figs. 11–13.

Female: Head deep pitchy brown or almost black, densely punctate and covered with short whitish hairs, mouth-parts reddish brown. Antennæ 14-jointed, first joint red, second pitchy brown, third red, black at tip, remaining joints black. Thorax deep reddish brown, pitchy brown along the anterior parallel lines and along the lateral grooves, evenly and finely punctate. Anterior parallel lines distinct and extending well backward. Parapsidal grooves rather broad and well defined, continuous; and very broadly apart at the scutellum. Median groove not evident. Lateral grooves running parallel with the parapsidal and extending well forward to a little beyond the middle. Mesopleurae punctate, piceous with a large reddish central area which is somewhat shining. Metanotum piceous and rugose. Scutellum rufous and rugose, foveæ wanting. Abdomen piceous, rufous basally, shining, and microscopically punctate, fourth to last segments edged with short hairs terminally and more densely punctate than the preceding ones. Legs rufous. Wings dusky hyaline, pubescent; radial area closed, yellowish brown as are also the surrounding parts; veins heavy, brown; cubitus continuous; areolet large and triangular. Length 3–4 mm.

Male: Wholly pitchy black. Legs rufous. Anterior parallel lines less distinct, and with traces of a median groove. Antennæ 14-jointed, all pitchy black. Abdomen small and wholly black, first, second and third segments smooth and shining, following segments densely punctate. Wing without the yellowish cloud in the radial area, veins very heavy. Length 2.25–3 mm.

Gall: On the terminal parts of the branches of wild rose (*Rosa* sp.). Green, polythalamous, round or irregularly rounded or somewhat elongate, swelling, covered with numerous aborted leaflets and filaments, giving it a mossy appearance, somewhat like that of *R. rosæ* with the mossy substance removed. Inside it is a dense pithy substance with numerous larval cells. Diameter 20–35 mm.

Habitat: Berkeley, Cal. (Dr. E. C. Van Dyke). Types: W. B.; paratypes: Mus. Comp. Zool., Cambridge, Mass.; Am. Ent. Soc., U. S. Nat. Mus. and British Mus.

The galls were found on a species of wild roses brought from the San Jacinto Valley in Southern California and planted in a garden, and the gall probably occurs on other species of wild roses. It matures in November and the flies emerge in February and March.

Rhodites pustulatoides sp. nov.

Female: Head jet black, somewhat shining, rugose with shining raised pustules on the lower part of the face and with short whitish hairs. Antennæ 15-jointed, first and second joints very short, red; third joint very long, becoming stouter toward the apex; fourth and fifth joints shorter than the third, equal in length, and quite stout, remaining joints less stout and subequal, all black with raised granules and very short hairs. Thorax jet black, coarsely rugose with many shining pustules; the parallel lines, parapsidal and lateral grooves are all lost in the rugosity of the surface and are but scarcely indicated. Pleuræ coarsely rugose and without a smooth central area. Scutellum very coarsely rugose much more so than the thorax. Abdomen smooth, shining and uniform red, anal segments punctate. Legs yellowish-red. Wings yellowish hyaline, veins very stout; radial area closed; second cross-vein with a large tooth; cubitus continuous; areolet large; cross-veins narrowly infuscated. Length, 2.75 mm.

Male: Uniform black, legs yellowish brown, middle and hind coxæ pitchy brown. Thorax less pustulate with the lines and grooves more distinct. Wings hyaline, not yellowish as in the female and with the veins very broad. Antennæ wholly black. Length 2 mm.

Habitat: Millers, Indiana (L. H. Weld).

The rose galls that gave these *Rhodites* were collected by Mr. Lewis H. Weld, at Millers, Ind., on the sand dunes, June 25, 1912. Some of them were opened November 28, 1912, and compound eyes were beginning to show, indicating that they were about to pupate. The galls were put out of doors during the winter and the flies emerged May 24, 1913. Mr. Weld does not remember the galls except that they look like those of *R. nebulosus* Bass, and were found on the leaves of a wild rose. The species is allied to *R. ignota* and *bicolor,* but differs from these in the sculpture of the thorax.

Rhodites nebulosus Bass.

Specimens of this species were collected at Toronto, Canada, by Mr. A. Cosens. Previously it was known only from Connecticut and New York. I found the galls in New Jersey also.

PHOTOTROPISM IN HETEROPTERA.

By J. R. de la Torre-Bueno, White Plains, N. Y.

Phototropism is defined as the reaction of the organism toward light. Its commonest, or most readily observed, form is the attraction that bright lights have for many insects. It is not to be assumed that this is the most usual manifestation of the phenomenon, since its negative or repellant form can be observed only by direct experimentation carefully controlled, even though it be a familiar fact that certain living beings shun light. Direct observations on the order Hemiptera are as unusual in this as in other aspects. What little is known has been casually learned and refers to comparatively few species. The experiments of Holmes on *Ranatra** are perhaps the most complete

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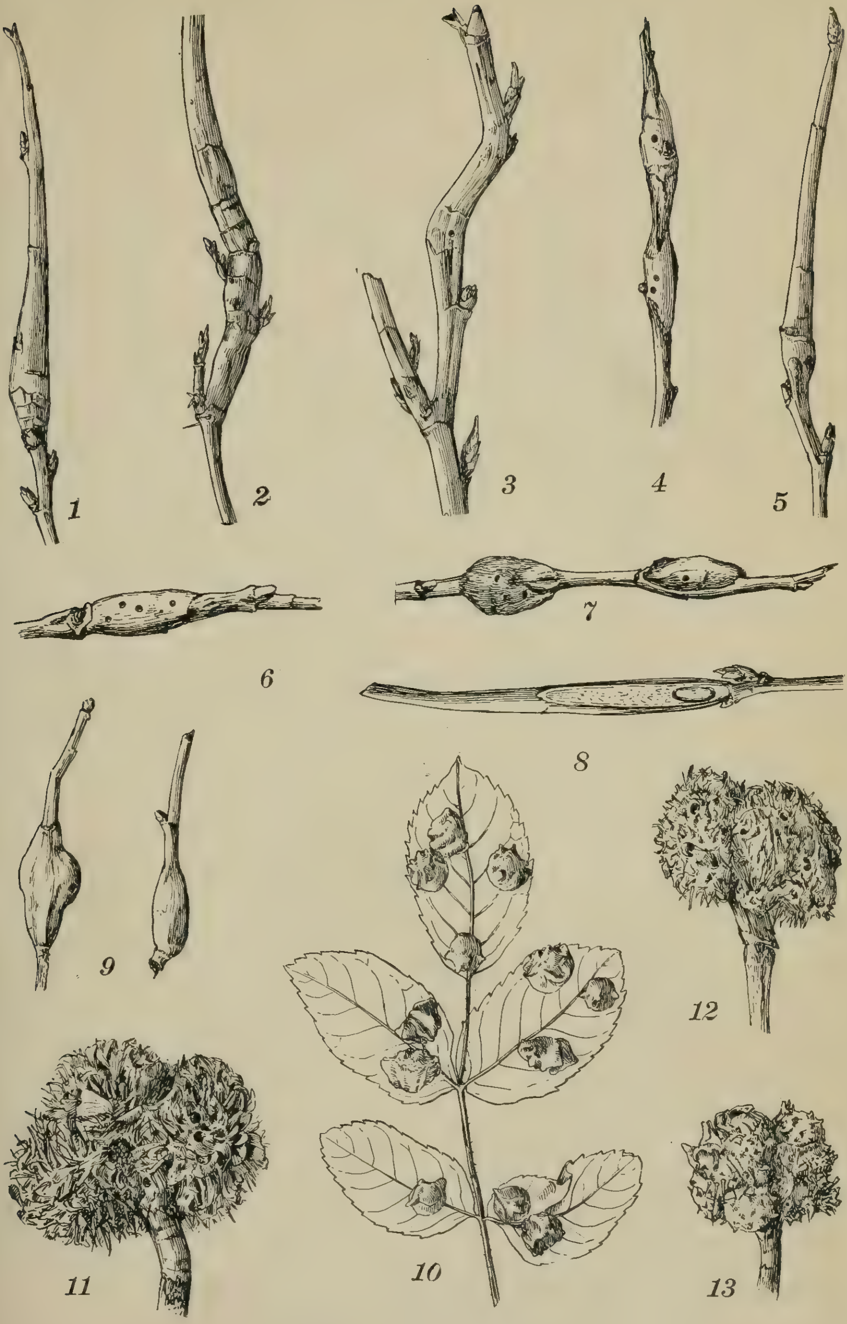
* S. J. Holmes, "The Tropisms and their Relations to the more complex Modes of Behavior," Bull. Wisc. Soc. Nat. Hist., 1912, X, pp. 13/23.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Rhodites—Beutenmuller.

series of tests of the reactions in the Heteroptera. Observations while collecting, especially with trap lights, are more abundant. In this country the night flights of the larger Belostomatids are known to all, even to non-entomologists. All our *Lethocerus* come in great numbers to the electric-light globes, and are the most familiar examples of positive phototropism.

To published records are added the following Miridæ which flew into my light globe at White Plains, kindly determined by Mr. Otto Heidemann:

Trigonotylus brevipes Jak. (3)
Trigonotylus confusus Reut.
Poeciloscytus basalis Reut.
Orthotylus flavosparsus Sahlb.

A large trap light maintained at the Bussey Institution, Forest Hills, Mass., has yielded the following:

Reduvius personatus Linn.
Lygus invitus Say
Lygus pratensis Linn.
Pseudoxenetus scutellatus Uhler
Plagiognathus fuscosus Prov.
Miris dolobratus Linn.

Four years ago in the plaza under the electric lights at Monterrey, Mexico, I picked up these species.

Pamera bilobata Say, one specimen.
Lygaeus circumlitus Stål, 5 specimens, not heretofore recorded from Nuevo Leon.
Dysdercus obscuratus Dist., heretofore known only from Guatemala and Costa Rica.

To these are now added twenty-six species taken in British Guiana by Mr. J. M. Geddes, who writes that they all came to the trap light while he was catching moths. Added to each is a brief note as to its distribution, and it is worthy of recognition that in many instances it extends notably the spread of the insect. All were secured at the same place, Tumatumari, on the Rio Potaro.

Loxa flavicollis Drury, a widespread species, recorded from Southern U. S. (Texas and Florida) to Rio Janeiro and the Antilles, as well as from this region.
Arocera apta Walker, known from British Guiana and recorded from Panama to Brazil.
Neodine macraspis Perty. Apparently known only from French Guiana.
Empicoris histrio Linn. Known from northern Brazil only.
Augocoris gomesii Burm., var. *æneonigra* Kirk. A species known before from Mexico, Venezuela and Brazil, but not from British Guiana.

Prolobodes giganteus A. & S. Although it extends from Honduras and Colombia to Brazil and Argentine, it is seemingly not known from British Guiana.

Melucha lineatella Fabr.

Nematopus indus Linn. A very common form.

Hypselonotus fulvus De G.

Oncopeltus varicolor Fabr. Extends from California and Mexico to the Argentine Republic and the Antilles; not heretofore recognized from British Guiana.

Rutuba perpugnax Bueno, described in BULLETIN, IX, No. 4.

Achillas bicaudatus Bueno, described in BULLETIN, IX, No. 4.

Salyavata variegata A. & S., not recorded from British Guiana, although extending from Nicaragua to Brazil.

Leogorrus litura Fabr. A very common species from Mexico and the West Indies to Southern Brazil.

Spiniger nigripennis Stål. Recorded by its author from Surinam only.

Eurylochus bellator Bueno. Described in BULLETIN, IX, no. 4.

Lamus geniculatus Stål.

Eratyrus mucronatus Stål. Seemingly not recorded since described from Demerara, British Guiana.

Rasahus sulcicollis Serv. Ranges from Lower California to Brazil, but heretofore unknown from British Guiana.

Sirthenea stria Fabr. A common species from the U. S. and West Indies to the Argentine Republic, now recorded from British Guiana.

Daraxa nigripes Stål. The most northern record of this species, heretofore known only from the Argentine Republic.

Apiomerus geniculatus Er. A common species in the Guianas and Brazil.

Manicocoris rufipes Fabr. Familiar in collections from the Guianas.

Heniartes flavicans Fabr. One of the most abundant Reduviidæ from the Guianas to the Argentine.

Heza sericans Stål. This handsome Brazilian species now recorded from British Guiana.

Plæogaster mammosus A. & S. Common from French Guiana.

All the other species of Heteroptera found recorded as coming to light are enumerated in the following list. The numbers appended refer to the bibliography.

Mormidea ypsilon Linn. Grenada, W. I. (29)

Euschistus variolarius P. B. Kansas (27)

E. euschistoides Voll. (as *fissilis*). Colo. (14)

E. servus Say. Texas (23)

Thyanta custator Fabr. Texas (23)

Th. perditor Fabr. Colo. (27)

Th. rugulosa Say. Colo. (14)

Banasa lenticularis Uhl. Grenada (29)

Agonosoma flavolineatum Lap. Grenada (29)

A. trilineatum Fabr. Grenada (29)

Symphylus deplanatus H. S. Grenada (29)

Amnestus pusillus Uhl. Kan. (27)

Alydus pallescens Stål. Grenada (29)

Harmostes procerus Berg. Argentine (2). Berg states that "it enters dwellings at night seeking the lamp lights and covers the tables."

Nysius providus Uhl. N. T. (9)

N. simulans Stål. Argentine (2). "This small Hemipteron frequently abounds in Buenos Aires and comes into the houses at night seeking the light and covering lamps, tables, etc."

N. inaequalis Uhl. Grenada (29)

Neoninus illustris Dist. Grenada (29)

Blissus leucopterus Say. Kan. (27)

Tetyra bipunctata H. S. N. Y. (9)

Cyrtomenus vestigiatus Dist. Cent. Am. (11)

Pachygrontha œdancalodes Stål. Grenada (29)

Myodocha serripes Fabr. Kan. (27)

Heraeus plebejus Stål. N. Y. (8)

Pamera basalis Dallas. Kan. (27)

P. bimaculata Uhl. N. Y. (9)

Cnemodus mavortius Say. Kan. (27)

Ozophora picturata Uhl. N. Y. (9)

Dysdercus andreæ Linn. Jamaica (30)

Callimiris tarsalis Reut. Kan. (27)

Phytocoris eximius Reut. Grenada (29)

Ph. desertorum Reut. Algeria (24)

P. cuneatus Dist. Grenada (29)

Argyrocoris scurrilis V. D. Arizona (32)

Adelphocoris rapidus Say. Texas (23). "Captured 165 specimens by the use of 3 trap lanterns" in one night.

Fulvius atratus Dist. Grenada (29)

Thaumastomiris piceatus Dist. India (10) "abundant at light."

Ilnacora stålii Reut. N. Y. (Olsen)

Psallus politus Uhl. Grenada (29)

Microvelia repentina Dist. Ceylon (10). "In a moth trap."

Gerris thoracicus Schumm. Asia (19)

G. tristan Kirk. Ceylon (19)

Ploiariola errabunda Say. N. Y. (1); Penn. (33)

Emesopsis nubilus Uhl. Grenada (29)

Oncerotrachelus acuminatus Say. Grenada (29); N. Y. (6)

Pygolamapis pectoralis Say. Kan. (27)

Sastrapada baerensprungi Stål. Ceylon (20)

Stenopoda culiciformis Fabr. N. Y. (6); Kan. (27)

Narvesus carolinensis Stål. Grenada (29)

Reduvius personatus Linn. Europe (12, 24a); N. Y. (8); Quebec (22)

Melanolestes picipes H. S. Kan. (27, 17)

Rasahus hamatus Fabr. Grenada (29)

R. sulcicollis Serv. Grenada (29)

Sirthenea stria Fabr. N. J. (25); Grenada (29); Florida (31)

Reduviolus ferus Linn. Kan. (27)

Reduviolus sp. Ceylon (20)

Ranatra linearis Linn. Europe (13)

Ilyocoris cimicoides Linn. Europe. De Geer is cited as authority for this by Kirkaldy (19)

Benacus griseus Say. Texas; Ill. (15); Nor. Car. (5); N. Y. (6, 3); Penn. (33); N. J. (25); Florida (31); Kan. (27)

Lethocerus americanus Leidy as above (6, 25)

L. uhleri Mont. as above (5, 25, 27, 31)

L. obscurus Duf. as above (6, 25)

L. annulipes H. S. Costa Rica (4). "Often picked up in the streets, principally at night."

L. collosicus Stål. Costa Rica (4)

L. niloticus Stål. (10). "Abundant at light in South Africa." (Distant)

L. deyrolli Vuill. India (10)

Belostoma (=*Lethocerus*). Tenn. (26)

Pedinocoris macronyx Mayr. California (16)

Arctocorisa alternata Say. Kan. (27)

A. expleta Uhl. Colo. (14)

Corixa pygmæa Fieb. Jamaica. "Comes to light in great numbers." (Kirkaldy)

Corixa spp. not named. Nor. Car. (7); Minn. (21); "attracted in large numbers to light." United States (28)

Micronecta lucina Dist. India (10)

M. minthe Dist. India (10)

M. dione Dist. India (10)

M. striata Fieb. India (10). "In October they flew to my lamps in numbers every day." (Distant)

Notonecta variabilis Fieb. Argentine (2). "In summer and autumn enters houses seeking the light of the lamps, etc." (Berg).

Notonecta spp. Minn. (21)

It is curious that although the European fauna is the most studied of all, records of only three Heteroptera at light have been found, most of the observations referring to *Reduvius personatus* well-known as a night hunter. Out of the 1,971 species enumerated in Fauna of British India by Distant, seven only have been noted as coming to light. Published American records are greater in number and 39 species have been observed or caught at light, the repeated observations being on *Benacus* and *Lethocerus.*

Published records give a total of Heteroptera coming to light of only 75 species out of the 20,000 described. To these few are now added 37, of which 25 represent the British Guiana material and 12 heretofore unpublished North American records, raising this total to 112 species. In general, they are species which lie more or less concealed by day and it may be reasonably deduced for many of the others, as is well known of *Reduvius,* that night is their chief period of activity. Certain others, notably the Miridæ, are probably denizens of nearby grass clumps or bushes. Many, especially the aquatic species, are great travellers by night and in their migrations in force fall victims to the attraction of bright light as they wing their way from one retreat to another.

BIBLIOGRAPHY.

1. Banks, Nathan. 1909. Notes on our Species of Emesidæ. Psyche, pp. 43/8.
2. Berg, Carlos. 1879. Hemiptera Argentina-Buenos Aires, R. A.
3. Bueno, J. R. de la Torre. 1905. Hemiptera Occurring within 70 Miles of New York. Journ. N. Y. Ent. Soc. XIII, pp. 29–47.
4. Ibid. 1906. On Some Aquatic Hemiptera from Costa Rica. Ent. News, XVII, pp. 54–57.
5. Ibid. and C. S. Brimley. 1907. On Some Heteropterous Hemiptera from North Carolina. Ent. News, XVIII, pp. 433–43.
6. Ibid. 1909. Hemiptera Heteroptera of Westchester Co., N. Y. Journ. N. Y. Ent. Soc., XVI, pp. 223–38.
7. Ibid. and G. P. Engelhardt. 1910. Some Heteroptera from Virginia and North Carolina. Can. Ent., XLII, pp. 147–51.
8. Ibid. 1910. Westchester Hemiptera, II. Journ. N. Y. Ent. Soc., XVIII, pp. 22–33.
9. Ibid. 1912. Three Days in the Pines of Yaphank. Can. Ent., XLIV, pp. 209–13.
10. Distant, W. L. 1902–10. Rhynchota, Vols I–V in Fauna of British India.
11. Ibid. 1903. Additions to the Rhynchotal Fauna of Central America. Trans. Ent. Soc., Lond., pp. 525–27.
12. Douglas, J. W., and Scott, John. 1865. The British Hemiptera, Vol. I. Ray Society, London.
13. Fairemaire, L. Hémiptères-Musée Scolaire Deyrolle, Paris.
14. Gillette, C. P., and Baker, Carl F. 1895. A Preliminary List of the Hemiptera of Colorado. Bull. 31, Tech. Ser. I, Colo. State Agric. Exp. Sta.
15. Hart, C. A. Animals of the Mississippi River Bottoms. Bull. Ill. Lab. Nat. Hist., III, pp. 123–84.
16. Harvey, G. W. 1907. A Ferocious Water Bug. Can. Ent., pp. 19–21.
17. Howard, L. O. 1900. The Insects to which the Name Kissing Bug was Applied during the Summer of 1899. Bull. 22, N. S., Div. Ent. U. S. Dept. Agr.
18. Kirkaldy, G. W. 1899–1900. On Some Aquatic Hemiptera from Jamaica. Can. Ent., XXXII, no. 129, pp. 28–30, and XXXIII, no. 112, pp. 270–73.
19. Ibid. 1899 to 1908. Guide to the Study of British Waterburgs. Ent. XXXII, no. 432, pp. 108–15, and irregular intervals thereafter.
20. Ibid. 1908. Notes on Some Sinhalese Hemiptera. Ann. Soc. Ent. Belg., LII, pp. 9–14.
21. Lugger, Otto. 1900. Bugs Injurious to Cultivated Plants. Bull. 69, Agric. Exp. Sta., Ent. Div., Minn.
22. Moore, G. A. 1907. List of Hemiptera taken at Como, Que. Can. Ent., XXXIX, pp. 161–3.

23. Morrill, A. W. 1910. Plant Bugs Injurious to Cotton Bolls. Bull. 86, Bur. Ent., U. S. Dept. Agr.
24. Reuter, O. M. 1900. Hemiptera Gymnocerata in Algeria. Finska Vet. Soc. Öfv., Bd. XLII, pp. 240–58.
24ª. Saunders, Edw. 1892. Hemiptera Heteroptera of the British Islands.
25. Smith, J. B. 1910. Insects of New Jersey. N. J. State Mus.
26. Summers, H. E. 1891. The True Bugs, or Heteroptera, of Tenn. Bull. Agr. Exp. Sta. Univ. Tenn., Vol. IV, 3.
27. Tucker, E. S. 1907. Some Results of Desultory Collecting of Insects in Kansas and Colorado. Kans. Univ. Sci. Bull. IV, no. 2, pp. 52–112.
28. Uhler, P. R. 1885. Hemiptera, in Kingsley's Standard Natural History, Vol. II.
29. Ibid. 1894. On the Hemiptera Heteroptera of the Island of Grenada, W. I. Proc. Zool. Soc., Lond., pp. 167–224.
30. Van Duzee, E. P., 1907. Notes on Jamaican Hemiptera. Bull. Buff. Soc. Nat. Sci., VIII, pp. 1–79.
31. Ibid. 1909. Observations on some Hemiptera taken in Florida. Op. cit., IX, pp. 149–230.
32. Ibid. 1912. Hemipterological Gleanings. Op. cit., X, pp. 477–512.
33. Wirtner, Rev. P. Modestus. 1904. A Preliminary List of the Hemiptera of Western Pennsylvania. Ann. Carnegie Mus., III, pp. 183–232.

THE RUSSIAN MASTERS IN COLEOPTERA.

By R. P. Dow, Brooklyn, N. Y.

In the half dozen papers of historical nature which have so far appeared in the Bulletin, and which were originally designed to give a little explanation of the abbreviated name of every man who has appeared as describing beetle species, but which have expanded into a disconnected history of Coleopterology, there was sketched: the spread of the Linnean science over Europe from 1755 to 1800; then its first devotees in America, Melsheimer, Say, Harris and others; its rise in England up to the death of Kirby; its spread in France up to the death of Dejean. To adhere to a logical order, if not consistent chronology, one must consider now the coleopterists of other lands up to the all important date in the science, 1844, when our own Leconte entered into a world mastery of the subject. There is little difficulty in dividing the subject into convenient groups. The German school of the first half of the nineteenth century, while not so strong numerically—so far as describers of American species are concerned—as the French, is of such vast importance that it could not be sketched in outline short of many papers. The Swedish school was limited to the first period of Linnean history. Italy has contributed comparatively little, although furnishing a few great names—notably Bonelli, Rossi, and the Costas, father and son. Both the latter devoted themselves to the fauna of the kingdom of Naples, the elder writing from 1821 to 1847, the younger from 1838 to 1859. Scopoli, whose work was considered by Kirby as second only to that of Linné, belongs to the German school in spite of his Italian name and professorship at Pavia. His great work was published in Vienna. He has a few species in the American checklist. Of the early masters Spain does not appear to have furnished any, although in the period now being considered Dr. Felipe Poey, writing from 1832 to 1851, was the Father of Cuban Entomology. He was principally a lepidopterist, but described one species of beetle, *Catorama bibliothecarum.*

The Russian school had its great career from about 1805 to the death of Motschulsky. True, it had a German origin, as did many aspects of Russian civilization through the German culture imported by Peter the Great. When the great Leconte, in the forties, attached to the expedition of John C. Frémont to ascertain the most feasible route for a railroad from the Mississippi River to the Pacific coast, reached his destination, he found that Russian beetle collectors had been there twenty years before. He knew nothing at the time but learned slowly of what they had found. Russia was an old nation with a new civilization—ascendant from the defeat of Napoleon—becoming a world factor. The Linnean study reached it inevitably. Museums were founded, teachers imported (generally Germans), societies formed. Many rich men took up the collecting hobby. On the whole they were collectors rather than careful students, in spite of the great number of new species and genera they described. They were widely scattered but they combined to make their publication at Moscow famous everywhere.

This school begins with M. Adams of Moscow, a pupil of

Fabricius, whose one American species is *Carabus vietinghovii.* Russian territory extended 3,000 miles eastward, all new to collectors, beginning with the very boundary of Siberia. It knew no exact confines across the Pacific. The province of Alaska was wholly vague, etxending from the North Pole to the Spanish Mexico, subject only to the undefined claims of Great Britain and the United States to the coast. The only American expedition to the coast was that of Lewis and Clark, about 1796. The inhabitants were Esquimaux, Indians and a few fur traders, until an old Spanish civilization was encountered in southern California. This vast domain was the Russian coleopterist's field and one precisely to his taste. Everything going into his collection was new, unless it was circumpolar, the risk of creating synonyms was *nil* except for such things as had been described from Scandinavia, Lapland, or out of the Otto Fabricius material from Greenland.

Before Say had gone to New Harmony and when Kirby was beginning to look at his boreal American insects, the Russian Imperial Chamberlain fitted out an exploring expedition under Captain (afterwards Admiral) Kotzebue. Two voyages were made around the world, around Cape Horn and exploring both sides of the Pacific. The naturalist of the first voyage was Adelbert von Chamisso, far better known as a poet. His only appearance in our checkist is in the possessive case—*Carabus chamissonis* Fisch. About this beetle he wrote quite a poem.

Dr. Eschscholtz of Dorpat in Livonia sailed on the second voyage in the double capacity of surgeon and naturalist. This man's first paper, a description of 30 new beetles, was published in St. Petersburg in 1818. His actual stay in California was limited to about two months. He wrote among others, monographs on *Passalus* and the Elateridæ and "Genera and Species of Staphylinidæ," his most famous work. His atlas on the Kotzebue collection appeared in 1829, but was left incomplete, as this true scholar died suddenly at the age of 40. His collection passed to Motschulsky, thence to the Society of Naturalists of Moscow. His creation of genera applicable to America was 43, his species 42.

Count C. G. von Mannerheim did much to make the Moscow Bulletin famous. Noble by birth and wealthy by inheritance, he had a most intense love for the science and aspired toward a scholarship of high order. He is beyond a doubt the greatest figure of the Russian school. He made a brave trial for exactness. He found time to describe species even throughout his long term as Governor of Finland. His first paper appeared in 1823, his last in 1854. He died during a visit to Stockholm to inspect the Schönherr collection. He was never in United States territory. His library, unusually large, and his collection remain in the Museum of Helsingfors. His American genera were 21, his species 244, and the majority of his types now exist. Of his species 21 figure in the checklist as unrecognized. This is not due to carelessness on his part. On the whole, his localities and other data are more carefully and reliably given than by many more recent writers. His "Coleopterous Fauna of California" contains descriptions of 300 species. This includes the collections of the first voyage of Kotzebue, the localities of which were badly mixed up, as he and Dr. Eschscholtz well knew. To make the best of a bad case Motschulsky described all these as from Alaska. They were corrected as far as possible by Mannerheim in the preface to his third "Nachtrag." He was fortunate in getting some thoroughly scientific men to collect for him, notably Dr. Frankenhaueser and Mr. Holmberg, but, of course, got all the material he could wherever he could.

The life of G. Fischer von Waldheim was somewhat similar. A Saxon, he was president of the Moscow Academy and contributed wholly to the Russian school. He bought his material, and wrote from 1806 to 1846. His chief work was the "Entomology of the Russian Empire." This great work was encyclopedic at its time, a costly monument, still treasured by every bibliophile. His American species were 2 and genera 3, mostly circumpolar.

Lieut. Victor von Motschulsky, later Colonel, began his contributions to the Moscow bulletin in 1834. In youth he had traveled over much of the eastern Russian Empire. He began a correspondence with Leconte in 1843, and wrote until 1861. In 1853–4 he made the grand tour of America (including Panama). His genera were 26, his American species 154, but he described 48 species unplaced in the checklist. When in this country he paid at least one long visit to Leconte and named all his own species in the latter's collection, as well as all he could be sure of that Fischer, Mannerheim and Eschscholtz had described. Leconte personally never saw the types of the great Russian collectors, and our knowledge of them is largely *fide* Motschulsky and Baron Chaudoir, who made many comparisons, including the Eschscholtz types, for a number of years. In 1857 Leconte added up the known species of our Pacific coast as 540.

If the career of Mannerheim be the most important in Russian history, his work marked throughout with Teutonic method, care and accuracy, that of Motschulsky is the most intensely Russian. While others acquired collections by purchase, he got his by personal work in the field. No province of the Russian Empire was unvisited. No task of military service was too exacting to deprive him of a few hours daily collecting. Just as Dejean dismounted on the field of Waterloo to pick up a strange beetle so did Motschulsky; he never ceased for an hour to be a Coleopterist. He had all the failings of the military caste. He was arbitrary, often overbearing, never to be contradicted. A volume could easily be written on his personality. In his later years he gained much recognition from his Imperial master and was given many honorary, even sinecure, details, in which his beetle work could remain paramount.

When Motschulsky died, he left his collection to the Society of Naturalists of Moscow. Few types survive. Neglect cannot be wholly charged for this loss. Entomological kleptomania is a peculiar phase of human nature. It is mainly confined to men who would under no circumstances take any sum of money or any thing else usually esteemed valuable, but who cannot resist the temptation to take a specimen lacking in their own collection. A friend's collection is occasionally sacred, a public collection never. One of the best known lepidopterists once made an open confession that if he wanted his neighbor's butterfly he would try to buy it or get it by exchange. Failing these he would steal it if he ever got the chance. Dr. Geo. H. Horn told a story of a visitor, a well known collector and man of wealth. A year later this man mailed to the Doctor six beetle types. He had spent the evening alone in the Doctor's rooms, but he had the eventual conscience. "The joke of it is," added the Doctor, "I never would have missed them." Every museum collection, unless watched with argus eyes, suffers from this kleptomania. Stories are told by men still living of the dispersal of the Motschulsky types. A coin in the hand of a venal attendant and a bug missing. "A paltry bug! What are these lunatics who give up a rouble for one!" Whole boxes occasionally went. Last winter a discovery was made that there were 285 boxes of Motschulsky material stored in the basement of the Museum, but in bad condition.

Among other notable contributors to the Moscow school, F. W. Mäklin, employed in the Museum, writing from 1845 to 1856, contributed 82 American species; the two Sahlbergs, of Finland, worked over beetles, publishing in Moscow from 1817 to 1848; von Gebler from 1817 to 1859, has 3 American species; Ménétriés, head of the St. Petersburg Museum, was a lepidopterist but he found the opportunity to describe 8 American beetles; he was an exception in Russian Entomology, being Parisian by birth and education: von Nordmann worked over Lepidoptera and Staphylinidae in Helsingfors from 1837 to 1851, contributing 6 American species and 3 genera of beetles. Morawsky was the successor of Ménétriés, represented by one American beetle. Baron Chaudoir contributed largely to the glory of the Moscow school, but he really belongs to a later age—that of Leconte in his prime. Chronicle here, however, that, after various vicissitudes, the Carabidae from the famous collection of Dejean came into the possession of Baron Chaudoir, whence they were bought after his death by René Oberthur, of France, who still owns them. It must be remembered, also, that there were three Sahlbergs who were coleopterists. The youngest belongs to our own generation.

WHAT I FOUND UNDER A PILE OF GRASS.

By Charles Dury, Cincinnati, Ohio.

About June 3, while I was absent my son mowed the lawn and carried the cut blue grass into the back yard, throwing it on a bare spot, where he left it, boylike, his motto being: Never do today what you can do tomorrow. To refresh himself after his labor he devoured part of a watermelon, the rind of which he hid under the pile. When I came back some days later I picked up the mass to take it away, thinking of the song: Everybody works but Father.

It was swarming with insects. I ran for a cyanide bottle and got busy. And, have been busy ever since. I have identified 118 species of Coleoptera and have about 25 still to identify. The pile would not fill a wheelbarrow and the locality is one of the built-up suburbs of Cincinnati. The weather was very hot and dry, so I kept the pile moist, particularly beneath it. A study of what was taking place beneath that hay is quite interesting, and would cause an advocate of brotherly love to sit up and take notice. The predaceous species were devouring the weaker ones. Several species of ants were always busy and the ground was honeycombed with the burrows of various larvæ. I have never before found the curious Nitidulid beetle, *Oxycnemus histrina* Lec. except in a "stink horn fungus." It is one of nature's mysteries where this species lives when there are none of these fungi growing. Let a warm rain occur and these odd but ill smelling plants come up in one night. Tear them open and most likely there will be some of these beetles inside. *Pleurophorus cæsus* Panz. is said to live in the excrement of *Passalus cornutus*, but many occurred under the grass and some of them had so recently hatched that I believe they emerged from the soft ground under the pile. There certainly were no *Passalus* anywhere near. Below is a list of the species so far identified:

Notiophilus semistriatus Say.
Dyschirius globulosus Say.
Pterostichus permundus Say.
Evarthrus sodalis Lec.
Bembidium versicolor Lec.
Amara angustata Say.
Scarites subterraneus Fab.
Stenolophus conjunctus Say.
rotundatus Lec.
ochropezus Say.
Cratacanthus dubius Beauv.
Agonoderus partiarius Say.
pallipes Fab.
Bradycellus rupestris Say.
Anisodactylus harrisi Lec.
Harpalus nitidulus Chd.
pennsylvanicus DeG.
Cryptopleurum vagans Lec.
Cercyon prætextum Say.
pygmæus Ill.
naviculare Zimm.
lugubris Payk.
pubescens Lec.
Falagria dissecta Er.
Aleochara brachypterus Fauv.
pleuralis Casey.
bimaculata Grav.
Actobius sobrinus Er.

Atheta palustris Kies.
dentata Brnh.
sordida Marsh.
dichroa Grav.
Philonthus micans Grav.
nigritulus Grav.
brunneus Grav.
cephalotes Grav.
discoideus Grav.
hepaticus Er.
Meronera venustula Er.
Trichiusa atra Casey.
Oligota pedalis Lec.
Sunius binotatus Say.
discopunctatus Say.
Apocellus sphæricollis Say.
Oxytelus insignitus Grav.
exiguus Er.
placusinus Lec.
Stilicus angularis Lec.
biarmatus Lec.
Stenus subtilis Casey.
alacer Casey.
Edaphus nitidus Lec.
Siagonum americanum Melsh.
Lithocharis ochracea Grav.
Platystethus americanus Er.
Belonuchus formosus Grav.
Lathrobiella ambigua Lec.
Xantholinus pusillus Sch.
Lispinus linearis Er.
Heterothops pusio Lec.
Lathrolepta debilis Lec.
Quedius fulgidus Fab.
Mycetoporus americanus Er.
Ercomus ventriculus Er.
Tachyporus elegans Horn.
chrysomelinus Linn.
brunneus Fab.
jocosus Say.
Anthobium pallidulum Lec.
Homaleum repandum Er.
Connophron elongatum Casey.
Tomoderus constrictus Say.
Pilopius lacustris Casey.
Trichopteryx mœrens Matth.
glabricollis Matth.
Ptinidium evanescens Marsh.
Litargus didesmus Say.
balteatus Lec.
Sericoderus subtilis Lec.
flavidus Lec.
Olibrus nitidus Melsh.
Scymnus intrusus Horn.
Telephanus velox Hald.
Æletes politus Lec.
Hister americana Payk.
Acritus acaroides Mars.
Attagenius piceus Oliv.
Atomaria gonodera Casey.
epphipiata Zimm.
ovalis Casey.
Tomarus pulchellus Lec.
Episternus apicalis Lec.
Carpophilus nitens Fall.
hemipterus Linn.
antiquus Melsh.
corticinus Er.
Colastus semitectus Say.
Ips fasciata Oliv.
Stelidota strigosa Gyll.
Omosita colon Linn.
Oxycnemus histerina Lec.
Typhœa fumata Linn.
Monotoma fulvipes Melsh.
Cathartus advena Wal.
Photinus pyralis Linn.
Monocrepidius bellus Say.
Drasterius elegans Fab.
Atænius gracilis Melsh.
Pleurophorus cæsus Panz.
Onthophagus hecate Panz.
Melanophthalma americana Mann.
distinguenda Com.
Throscus constrictor Say.
Parandra brunnea Fab.
Anthicus cervinus Laf.
floralis Payk.
Sitones hispidulus Germ.
Phytonomus punctatus Fab.

A NEW SPECIES OF ATLANTICUS FROM THE MOUNTAINS OF GEORGIA AND NORTH CAROLINA.

By William T. Davis, New Brighton, Staten Island, N. Y.

In looking over my collection of *Atlanticus* I observed that it contained two females with their ovipositors slightly curved upward, evidently belonging to an undescribed species. They came from Lake Toxaway, North Carolina, and were kindly presented to me by their captor, Mrs. Annie Trumbull Slosson. In the collection of the American Museum of Natural History and in that of the Brooklyn Museum there are specimens belonging to the same species, and Messrs. Rehn and Hebard of the Academy of Natural Sciences of Philadelphia kindly placed additional material in my hands for examination.

Atlanticus monticola, new species.

Type, female, Lake Toxaway, N. C., in the collection of the author.

Brown, the sides of the pronotum streaked with black particularly at the posterior portion, also an interrupted band of black on the outer sides of the femora. Pronotum narrower in front than behind, somewhat pinched before the middle, and with the lateral carinæ well defined. Ovipositor stout, swollen at the base with a gradual upward curve from about the middle and symmetrically narrowed to a point from both above and below. Notch of the subgenital plate U-shaped.

Female	mm.
Length of body	20
Length of pronotum	8
Greatest width of pronotum	5.5
Length of caudal femur	18
Length of ovipositor	19

In addition to the type the following specimens, which may be considered paratypic, have been examined.

Lake Toxaway, N. C., one female slightly larger than the type. Mrs. Slosson, collector (Davis collection).

Valley of the Black Mountains, N. C., August 5, 1906, male; August 30, 1906, female. Wm. Beutenmuller, collector (collection Am. Museum Nat. History). The male has the short tegmina and rather long hind femora, characters of *monticola*, as mentioned in the accompanying table for the separation of the species.

Black Mountains, N. C., September, 1905, male. Charles Schaeffer, collector (collection of the Brooklyn Museum of Arts and Sciences).

Balsam, N. C., Jones' Peak, August 19, 1903, one male and one female. Prof. Albert P. Morse, collector (Morse collection).

Linville, N. C., July 18, 1903, male (Morse collection).

Balsam Mountains, N. C., Jones' Knob, 6,000 ft., October 7, 1905, male. Morgan Hebard, collector (Hebard collection).

Rabun County, Ga., Pinnacle Peak, August 20, 1913, male. Dr. J. Chester Bradley, collector (Georgia State collection).

Clayton, Rabun County, Ga., 2,000–3,000 ft., June, 1909, two male nymphs, one female nymph. Wm. T. Davis, collector (Davis collection).

An examination of the cerci of the males of this series shows some variation. They are slightly stouter in some individuals than in others and the apical portion beyond the inner tooth is occasionally more drawn out. However, they have been considered as of the same species for the reason that the cerci of two undoubted males of *Atlanticus pachymerus* collected by the author while they were singing together in the same clump of bushes on the evening of July 26, 1914, at Deep Pond, Wading River, Long Island, N. Y., show variation along identical lines.

The three species of *Atlanticus* so far described from the northeastern United States* and the mountains to the south may be separated as follows:

Posterior femora less than twice as long as the pronotum.

Tegmina in the male covering about one half of the abdomen. Ovipositor of the female viewed in profile straight to the tip on the lower edge, but cut obliquely downward to the tip on the upper edge. Notch V-shaped in the subgenital plate of the female. Length of male about 20 mm.; female, including ovipositor, about 38 mm. *pachymerus* Burm.

Posterior femora more than twice as long as the pronotum.

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* Another species of the region is to be described by Rehn and Hebard.

Tegmina in the male covering about one fourth of the abdomen. Ovipositor viewed in profile slightly curved upward and symmetrically narrowed to the tip on both the upper and lower edges. Notch U-shaped in the subgenital plate of the female. Length of male and female as in *pachymerus,* except the hind femora, which are proportionately longer ....*monticola,* new species.

Tegmina in the male covering less than one fourth of the abdomen. Ovipositor shaped as in *pachymerus.* Notch narrow and deep in the subgenital plate of the female. Hind margin of the pronotum more rounded, especially in the males, than in either of the above mentioned species; also with the hind femora proportionately longer. Length of male about 23 mm.; of female, including ovipositor, about 45 mm.......................................*dorsalis* Burm.

The wasp *Chlorion ichneumoneum* is one of the considerable enemies of *Atlanticus,* and the writer has given an account in the Journal of the N. Y. Ent. Soc. for December 1911, of the burrows he found on the side of Black Rock Mountain, Rabun County, Ga., stored with many examples of *dorsalis.* The species of *Atlanticus* are often attracted to the trees sugared for moths and they may be likewise collected in traps consisting of jars or old tin cans sunk in the ground and baited with molasses. More females than males seem to be attracted by the above methods. In the Canadian Entomologist for April 1893, an account is given of a captive *Atlanticus pachymerus,* which we kept from June 26 to September 10, and fed on berries, watermelon, etc. While this and other individuals were found in tussocks of grass in a swampy field, they are more often present in dryer situations. They have been collected while singing on low bushes a foot or two from the ground.

PROCEEDINGS OF THE BROOKLYN ENTOMOLOGICAL SOCIETY.

The regular meeting of the Brooklyn Entomological Society was held at 185 Brooklyn Ave., June 11, and was called to order by President Davis. Present twelve months and two visitors.

Mr. Weeks reported more *Cychrus elevatus* this spring found hidden in the debris around his raspberry bushes. *Libythea bachmanni* was taken July 15, 1908, at Bay Ridge. *Catocala minuta* was observed by Mr. Dow June 11, 1914, a week earlier than usual. Mr. Schaeffer spoke of an introduced European species, *Aphodius hæmorrhoidalis,* taken by Mr. Wintersteiner at Snake Hill, N. J., and again near Paterson. In both instances the insect was found under cow manure. Its position is in the first group of the genus as synopsized by Dr. G. H. Horn. This record led to prolonged and general discussion of the matter of accidental importations of insects which fail to become acclimated. The *Sphæridium* species are out of that class. *S. scarabæoides* occurs in New Hampshire, near the railroad track, in countless numbers. One could take hundreds of species of Ptinidae and Cerambycidae in the stored hardwoods in South Brooklyn on the waterfront. Tarantulas are common there. Mr. Olsen showed the local collection of Membracidæ made by Mr. Schott. *Telamona unicolor* from Rockaway Beach has also been recorded from Staten Island, Kansas, Canada and the Pacific Coast. *T. querci,* not in the New Jersey list, from Long Island, also Summit, N. J. *Glossonotus acuminatus* from North Beach, L. I., *G. univittatus* from L. I. *Heliria scalaris,* not actually recorded from New Jersey, taken in Prospect Park, Brooklyn. *Cyrtolobus tuberosus,* not in the New Jersey list, from Summit, N. J. *Atymus castanea,* a good Long Island record, since the chestnuts are dying. *Banasa sordida,* not previously actually recorded from New Jersey, was taken at Huntington, L. I., also from Madison, N. J.

Among beetle records was mentioned *Panagæus fasciatus* from Rockaway Beach, June 11. In Hemiptera Mr. Oslen mentioned *Acanthia signoretii* taken by Mr. Dow in early September at Freeport, L. I. This species was in great numbers on the mud flats above high tide, flying with and almost as fast as *Cicindela hirticollis.* Also *Lygæus albulus* taken by Mr. Olsen in Yaphank, L. I., July 4, 1911.

The first meeting of the season of the Brooklyn Entomological Society was held at 185 Brooklyn Ave., October 15, President Davis in the chair, sixteen members and seven visitors present, including Chas. Dury, the veteran coleopterist of Cincinnati, Mrs. Dury, Mrs. Engelhardt, Paul A. Powell, of Richmond Hill, interested in Ornithology and Harrison Tietz, of Richmond Hill, who has become interested in Lepidoptera.

The treasurer reported cash on hand $367.62, with all bills paid to date The secretary reported on absent members as far as he had learned. Pearsall has adopted a permanent residence at Allaben, Ulster Co., N. Y., near where he has collected for many years. F. Wintersteiner, who has been in Vienna since early summer has written, date September 15, hoping to get back in November.

Following the custom of having no program at the first meeting but leaving it to each member to relate some experience, all reported in turn. Mr. Dow had spent much of the summer in New Hampshire, taking a few beetles and having a few Lepidoptera to give away. Among them was an *Arctia caia* to help fill the Brooklyn Museum series. Also to the Museum went a *Phlegethontius cingulata* taken in the heart of Brooklyn. Mr. Olsen had been working on the local Aphidæ and has prepared about 300 slides of them. He showed a twig of hickory girdled by *Oncideres cingulatus,* and the habits of this beetle were discussed at some length. Mr. Engelhardt spoke of three October days at Yaphank, with much sugaring. *Cychrus elevatus* came along a sandy path to eat the sugar drippings. *Catocala herodias* ♀ came from Wading River in July. He showed *Catocala phalanga* and the Carabid *Myas cyanescens.* A series of *Graphiphora subterminata* was taken in April on pussy willow blossoms. Others were *Pachnobia fishii* and *Autographa biloba, Calocampa cineritia* and *Calymnia orina. Brephos infans* was very abundant in the spring at Massapequa. Mr. Leng spoke of the joy of finding a big cluster of *Thaneroclerus sanguineus* under bark. Mr. McElvaire spoke of trying light collecting at Northport. The butterflies, *Pyrameis atalanta* and *huntera* were the principal visitors. His sugaring was poor because the hosts of *Leucania unipuncta* drove out all others. Mr. Clark, of Providence, R. I., it was noted, had the same experience. The latter lost his temper to the point of devoting the evening to swatting the army worm to the extent of about nineteen quarts. Local sugarers had similar experiences. *Unipuncta* was everywhere in unprecedented abundance. Mr. Erhardt all summer had tramped the same old places, getting pretty much the usual run of things. Mr. Tietz showed some interesting Lepidoptera, a *Catocala relicta* quite dark, and *Basilarchia archippus* with secondary bands obsolescent. Mr. Doll had followed up *Papaipema,* getting *cerina* from the tiger lilies in one place at Aldene, N. J., but nowhere else. Mr. Weeks at Yaphank had varied experiences. He had sawed out the galleries of *Prionixystus robiniae* and found a way to trap *Pasimachus depressus. Cychrus elevatus* around the roots of lilac were attracted by the maggots in the dead *Xyloryctes satyrus.* Mr. Sleight had bred out a few more caddis flies. Mr. Torre-Bueno had sought Hemiptera, as usual. He showed a lot from beach drift collected by J. D. Sherman, Jr., from Marquette, Mich., in July, which included in goodly numbers *Thyreocoris unicolor* and *Sehirus cinctus,* a few others of interest: *Perilloides exaptus, Pentatoma persimilis, Alydus conspersus,* rather rare, *Lygaeus turcicus, L. bicrucis, Cymus discors, Geocoris bullatus, Sphragisticus nebulosus, Orthostira* n. sp., the exceedingly rare *Galeatus peckhami* in a good series, two winged *Reduviolus subcoleoptratus,* rare in collections, and a few aquatics. His local collecting found species rather scarce and rather darker in color than during average seasons. He spoke at some length of the Kirkaldy collection now in his hands. It arrived perfectly from transit from Hawaii, but had suffered much previously. Box after box full of specimens had been separated from labels. Certain type series were badly *Dermestes* eaten.

Mr. Schaeffer had collected from Long Island, and showed a box of specimens. *Pityobius anguinus* had come to light at Wading River. *Choragus zimmermanni* is always rare. A *Trechus,* coming from Bellport at first called provisionally *chalybeus,* is a new thing still to be named. In his box was *Chlaenius purpuricollis* from Rockaway, *Tythonyx erythocephalus* from Wading River, *Onthophagus cribricollis* Yaphank, *Dialytes truncatus* Wyandanch.

Mr. Dury related tales of collector's experiences in Arizona and New Mexico. One man struck the dry season. The best he could get were a few *Trox* and *Dermestes* from some cow skin. Another arrived during the rainy season and reported that the way to take specimens was by scoop shovel to be measured by the quart. Mr. Davis had done his usual careful systematic work over Long Island. Among the mass of records stand out *Dichromorpha brunnea* Scudder, a southern thing, and *Coccinella transversoguttata*. Of this northern species three were taken, one at Wading River, May 30, on the shore, by Olsen; one inland at Deep Pond, Wading River by Davis; and one at Orient by Roy Latham. It would appear that the species is well established on the eastern end of the island. None has been so far reported from the western end, none from Staten Island or New Jersey. R. P. Dow, Secy.

Los Angeles, now the largest city in California, is not to be behind any in Museum work. Last July it opened its Southwest Museum, free to the public every day. The Museum occupies a 17-acre site at Marmion Way and Avenue 46 with a frontage of 200 feet. The initial cost was $165,000. The first appropriation for collections was $250,000. Its concrete Hispano-American building commands a view of sixty miles of the Sierra Madre Mountains. A feature is the Caracol Tower 42 feet square and 125 feet high, around the spiral staircase of which open ten stories of rooms. The entomological department is on the top floor with Fordyce Grinnell, Jr., as curator. It has the support of an Entomological Club, the Biological section of the Academy of Sciences, and two organizations of young naturalists, the Lorquin Natural History Club and the Rivers Natural History Club. The two last organizations meet monthly and have as members the younger element, by whom collections are enthusiastically being made. Lepidopterists so far are in the majority. All purpose combining in building up a local collection of insects.

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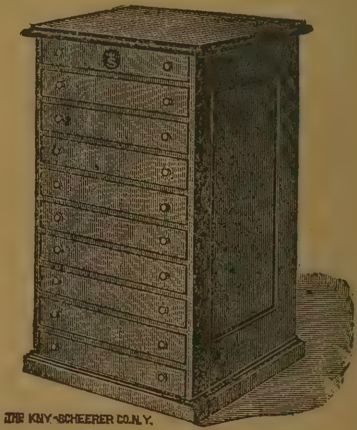
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THE SPECIES OF COSSONUS CLAIRV. (COLEOPTERA) OF AMERICA NORTH OF MEXICO.

BY EDWIN C. VAN DYKE, Berkeley, Cal.

This paper is the outgrowth of an attempt to properly determine the specimens in my own collection where I found that I not only had a number of species apparently new, but that there was a great misunderstanding with regard to many of our other species. A very large series was at my disposal, for much of which I must thank my numerous friends and correspondents.

The species of the genus *Cossonus* are of some economic importance, living as they do beneath the bark of dead trees and in the outer sapwood, or occasionally, even in the heartwood itself, and in dead shrubs. Most of them are confined to certain types of trees, certain few to particular trees, and their distribution usually follows the distribution of these trees. On the West Coast, I have devoted some time to the working out of these relationships and hence will add some notes concerning them. With regard to the Eastern species, I can add but few biological notes for most of those when given in lists are merely stated to have been collected beneath the bark of dead trees. An interesting thing in connection with their biology is the fact that in many cases they are accompanied by different species of the genus *Rhyncholus*. For instance, *Rhyncholus oregonensis* Horn. lives more or less in company with *Cossonus crenatus* Horn. and *C. ponderosæ* n. sp., though generally preferring the dryer parts of the trees, *Rhyncholus pallens* Casey with *C. lupina* n. sp., and *R. brunneus* Mann. with *C. piniphilus* Boh., and so forth. The genus is of wide distribution, with species in both the old and new world but with a dominance in the tropics, particularly of this hemisphere.

South of us in Mexico and Central America there are a large number of species and many of these are quite gaily colored. All of ours but one are somber in appearance.

In 1873 our species were reviewed by Dr. George Horn* the number listed by him being eight, and this number was not increased by 1885 when the Henshaw Check list† was published. Since this time, however, two others have been described, *C. hamiltoni* Slosson‡ from Florida, described in 1899, and *C. sulcirostris* Fall§ from Lower California, described in 1909, though this latter was changed to *C. falli* Champion|| somewhat later because the name was preoccupied by a Mexican species. Five more remain to be added. I have stated that there was some confusion with regard to some of our species. Of Pacific species, the common, yet undescribed *C. ponderosæ* n. sp. is generally mistaken and labeled in most collections as *C. piniphilus* Boh., the latter being generally lacking. *C. impressus* Boh. from Southern Florida is usually labeled *C. impressifrons* Boh. This misidentification is traceable to Dr. Horn. The true *C. impressifrons* Boh. was described from Pennsylvania and not recognized by him nor ap-

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* "Contributions to a Knowledge of the Curculionidæ of the United States," by George H. Horn, Am. Phil. Soc., 1873.

† "List of the Coleoptera of America, North of Mexico," by Samuel Henshaw, Phil. 1885.

‡ "A New Cossonus," by Annie Trumbull Slosson, Can. Ent., V, 31, p. 193.

§ "New Coleoptera from the Southwest—IV," by H. C. Fall, Pasadena, California, Can. Ent., 41 (1909), p. 169.

|| "Biolog. Centr. Amer. Insecta Col.," Vol. 10, pt. 7, p. 55.

parently by any one following. According to the original description, a copy of which was kindly secured for me by Mr. H. W. Wenzel, it is a different insect entirely. It applies to one of the forms of *C. concinnus* Boh., the form in which the thorax is more evidently narrower than the elytra, flatter, with sides more convergent anteriorly, more evident thoracic crista and impressed foveæ on vertex. Forms of this nature seem to be common in the central part of Pennsylvania and I am confident that the description applies to them, it fits them so accurately. These forms however, grade insensibly into the more familiar and more robust, so-called typical forms. There are but three species of the genus, if we except *C. subareatus* Boh. which might possibly be found in the mountains on the north, which are to be found in Pennsylvania. Of these, it is most decidedly not *C. platalea* Say nor what we now accept as *C. corticola* Say, therefore by exclusion even without regard to the good description, we would naturally feel that it must apply to one of the phases of *C. concinnus* Boh. Other cases that have caused confusion will be discussed in the body of the paper.

The characters which I have found the most staple and useful are, first, the shape of the rostrum and second, the shape and sculpturing of the thorax. The size of the eyes, general shape of the head, character of funicle, elytra, and so forth, are other features which were also useful. Most of the species have a somewhat similar appearance and they all vary considerably, not only in different parts of their geographical range but even within their own colonies. Good series are therefore essential to a proper understanding of the species. The synoptic table given is primarily based upon that used by Dr. Horn and the genus as restricted here, is as generally accepted and as defined by Le Conte and Horn.* The bibliography given is naturally incomplete, it being thought necessary to list only the most important papers on the subject.

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* "Classification of the Coleoptera of North America," by John LeConte and George H. Horn, Smithsonian Misc. Coll., Washington, 1883, p. 511.

Species bicolored, black with base of elytra, metasternum and abdomen rufous. .... *hamiltoni* Slosson.

Species unicolored (when mature).

Thorax truncate at base, antennæ post median........ *bohemanni* Horn.

Thorax bisinuate at base, antennæ median or anterior to middle.

Thorax broader than long, sides arcuate, surface very unevenly punctured. .... *platalea* Say.

Thorax longer than wide, sides slightly arcuate or straight.

Basal portion of rostrum longer than dilated portion. *subareatus* Boh.

Basal portion of rostrum equal to the dilated portion.

Rostrum elongate, apical portion distinctly wider than basal and rather suddenly dilated. Thorax narrower than the elytra.

Thorax somewhat cuneiform, with sides convergent forwards from point just anterior to base, with lateral discal punctures much finer and with median line at base often cariniform.

Larger species, over 4 mm. in length, with moderately large elytral punctures which diminish but little in size posteriorly, rostrum about twice as long as broad.

Thorax much narrower than elytra, sides gradually and distinctly convergent from middle to apex where but slightly constricted. .... *piniphilus* Boh.

Thorax but little narrower than elytra, sides slightly convergent from just in front of base to near apex where they become rather suddenly constricted. .... *lupini* n. sp.

Smaller species, less than 4 mm. in length, thorax almost as wide at base as elytra, gradually convergent forwards from in front of base to apex where but slightly constricted. Elytra with rather fine punctures which diminish rapidly in size posteriorly. Beak rather broad, less than twice as long as broad. .... *impressus* Boh.

Thorax not cuneiform, with sides almost parallel or slightly arcuate from near base to near apex where they become suddenly constricted.

Thorax distinctly narrower than elytra and somewhat sub-depressed.

Head, including eyes, cuneiform, gradually convergent to base of rostrum, rostrum about twice as long as wide and with apical portion distinctly wider than basal.

Basal portion of rostrum with sides parallel, punctures of thorax more regular as to size. *ponderosæ* n. sp.

Basal portion of rostrum with sides distinctly divergent anteriorly, punctures of thorax more irregular as to size. ....*quadricollis* n. sp.

Head, including eyes, not distinctly cuneiform, suddenly constricted to base of rostrum, rostrum broad and flat on top, less than twice as long as broad, sides of basal portion parallel and apical portion but little wider than basal....*texanus* n. sp.

Thorax but little, if any narrower than elytra. Head rather suddenly constricted to base of rostrum.

Thorax shining and less convex dorsally, without concavity posteriorly, with punctures moderate and well separated. Rostrum with sides of basal portion parallel and apical portion moderately dilated. ....*ellipticollis* n. sp.

Thorax less shining, quite convex dorsally and with median line concave behind, punctures coarse and approximate. Rostrum stout, sides of basal portion divergent forwards, apical portion greatly dilated. ....*concinnus* Boh.

Rostrum broad and short, apical portion more gradually dilated and but little wider than basal. Thorax as wide as elytra.

Thoracic punctures coarse and close together. Elytral punctures somewhat finer, approximate and crenulate. Rostrum non-sulcate.

Color black, striae deeper and broader at base, punctures of thorax coarse and cribrate at sides. All joints of funicle of about same width and club at least twice as wide as funicle.........*crenatus* Horn.

Color more piceous, striae but slightly deeper and broader at base, punctures of thorax rarely cribrate even at side. Outer joints of funicle distinctly broader and club not twice as wide as funicle. *corticola* Say.

Thoracic punctures coarse and distant. Elytral punctures fine and well separated, not crenulate, rostrum sulcate. Species small and linear. ....*falli* Champion.

C. hamiltoni Slosson. Can. Entom. V. 31, p. 193.

"Black, shining, with basal half of elytra, the metasternum and abdomen rufous, antennæ and legs dark red. Rostrum stout, finely and closely punctulate, very abruptly and almost transversely-quadrangularly dilated at apex, the dilated portion barely as long as the basal portion.

"Thorax oblong, with a triangular depression extending from base to near apex and having a feebly indicated and sometimes slightly elevated median line. The punctures in this depression are coarse and irregular, on sides of thorax smaller and more regular. Elytra slightly wider than base of thorax, surface rather deeply striate at base; striæ with close deep punctures, but not impressed at apical portion. Prosternum very coarsely and somewhat densely punctulate; metasternum more sparsely punctured; as are also the metasternum and first two abdominal segments.

"Length—exclusive of rostrum—2.9 mm.

"Locality—Miami, Biscayne Bay, Fla."

Several specimens taken from beneath the bark of a dead rubber tree by Mrs. Slosson, one of which, in the collection of Mr. H. C. Fall, I have examined.

The original description has been given. The species is so distinct because of its color that it could be confused with nothing else in our fauna. There are, however, a number of species in the Mexican and Central American regions that closely resemble it.

C. bohemanni Horn. Proc. Am. Phil. Soc., Vol. XIII, 2 Z, p. 438, *platalea* Boh. Sch. Gen. Curc., IV, p. 998.

"Nigro-piceous, nitidus, glaber, supra deplanatus, antennis, tibiis, tarsique ferrugineis; rostro capite duplo longiori, tenuiori, apice minus sensim dilatato; thorace latiori subquadrato, antice evidenter coarctato, supra in ipsa basi obsolete bis impresso, dorso remote lateribus crebre punctato; elytris profunde punctato-striatis, interstitiis laterioribus majis convexis."

The above is the original description of what Boheman considered to be *platalea* Say. The characters however, do not fit that species nor in fact any of our species, the post median antennae and truncate base of thorax, characters which it was said to possess, being such as are found in none of our known species. Horn, though he renamed it, could not recognize it but supposed that Boheman must have had in his hands a species with which he was unfamiliar. No species exactly answering to that description has been seen since and I am inclined to think none will, for I believe that Boheman had an atypical specimen of *platalea* in his hands or drew up his description so hastily that he made it inaccurate and therefore impossible to recognize. The parallel sides of the thorax which it was said to have, is a character which many specimens of *platalea* possess. Dr. Horn laid too much stress upon the "arcuate sides" of the thorax in his remarks upon that species.

C. platalea Say. Descr. Curc. N. A., p. 24; Am. Ent. Edit. Lec., 1, p. 292; Horn, Proc. Am. Phil. Soc., XIII, 2 Z, p. 438.

Black, shining. Head rather finely and discretely punctured, rostrum more coarsely and closely, small fovea between base of eyes, eyes moderately and but slightly prominent, diameter of head across eyes slightly greater than dilated portion of rostrum, sides of head gradually convergent to base of rostrum. Rostrum longer than half the thorax, moderately accurate, basal portion longer than the apical, cylindrical, slightly compressed laterally, gradually increasing in width to apical portion which is moderately though rather suddenly quadrangularly dilated. Joints of funicle of antennae only very gradually increasing in width outwards, the outermost joint barely one half the width of the basal portion of club.

Prothorax as wide or wider than long, apex rather suddenly narrowed, base feebly bi-sinuate and on each side of middle slightly impressed, sides moderately and regularly arcuate (in some species almost parallel), surface flattened, unequally punctured, punctures at the sides denser and finer, at middle somewhat coarser and more sparsely placed, but nowhere dense nor very close together, at base, the basal rudiment of a crista just evident.

Elytra broader than the thorax, flattened, striate, moderately coarsely and serrately punctured, intervals flat, very minutely uniseriately punctate.

Body beneath sparsely punctured. Length 5.5–6.5 mm., breadth 1.25.

Occurs from the Middle States to at least as far south as Virginia (Fredericksburg, Richardson) and West to Iowa (Allegheny, Pa., Hamilton; Iowa City, Iowa, Wickham). It has been found beneath the bark of various broad-leaved trees as the butternut (Granley), white walnut (Hamilton and Hopkins) and poplar (J. B. Smith). It has also been secured from beneath dead pine bark at Da Costa, N. J. (H. W. Wenzel) but I consider this not a normal food tree.

The species is best recognized, aside from the characters given in the table, by its very black shining appearance. It closely resembles *C. subareatus* Boh. but can be told from that by its broader thorax, slightly more prominent eyes and shorter basal portion of rostrum. Its food habits appear to be also similar to those of its closest ally.

C. subareatus Boh. Schönh., Gen. Curc., VIII, 2, p. 266; Horn, Proc. Am. Phil. Soc., XIII, 2 Z, p. 438.

Black, shining. Head quite smooth except laterally back of eyes where very finely and sparsely punctured, rostrum moderately coarsely and closely punctured at sides and less coarsely and closely above. Eyes moderately and but very slightly protruding beyond sides of head, diameter of head across eyes slightly greater than dilated portion of rostrum. Sides of head gradually convergent to base of rostrum. Rostrum as long as one half of the thorax, but very slightly arcuate, basal portion longer than the apical, parallel for first half then gradually increasing in width to apical portion which is one third broader than its neck and quadrangularly dilated. Joints of funicle of antennæ only gradually increasing in width outwards, the outermost joint about one half the width of club.

Prothorax slightly longer than broad, apex rather suddenly narrowed, base feebly bi-sinuate and but slightly impressed on each side of middle, sides almost parallel at middle or but slightly arcuate, basal angles rounded, surface flattened, unequally punctured, the punctures at sides moderate below and finer above and quite coarse and deep in median area, particularly basally, though always well spaced. At base, the basal rudiment of a crista is evident.

Elytra but slightly wider than thorax, striate, striæ moderately coarsely and serrately punctured, intervals convex, very minutely uniseriately punctured.

Body beneath sparsely and rather finely punctured. Length 4.5–7 mm., breadth 1.5 mm.

Occurs from the Middle States to Nebraska and Kansas and from the Lake States across our northern boundary to Montana, Washington and thence south and through the Sierras to below Lake Tahoe, Cal. It is apparently confined to broad-leaved trees. I have found it beneath the bark of the broad-leaved maple (*Acer macrophyllum* Pursh) at Seattle, Wash., and the aspen (*Populus tremuloides* Michx.) at Lake Tahoe, Cal. It has also been taken in Marin Co., Cal.

This species is closest to the preceding. Its special features are the very long basal portion of the rostrum, the peculiar punctuation of the thorax and the slender funicle of the antennæ, the last of which it shares with *platalea*.

C. piniphilus Boh. Schönh. Gen. Curc., IV, p. 1002; Mann. Bull. Mosc., 1843, II, p. 295; *scrobiculatus* Lec., Proc. Acad., 1859, p. 285, Col. Kansas, p. 18; *californicus* Mots., Bull. Mosc., 1845, I, p. 99; Horn, Proc. Am. Phil. Soc., XIII, 2 Z, p. 438.

Black, shining. Head finely and sparsely punctured in basal portion, coarsely and closely between eyes and on rostrum. Eyes moderate in size and barely protruding beyond side of head, diameter of head across eyes at least one third greater than dilated portion of rostrum. Sides of head convergent and almost straight to base of rostrum. Rostrum as long as one half the thorax, slightly arcuate, basal portion about equal to apical, broad and with parallel sides, apical portion distinctly dilated and quadrilateral and about one third broader than basal portion. Joints of funicle slightly though gradually increasing in width outwards, the outer joints one half width of club.

Prothorax distinctly longer than broad, with sides near base but slightly narrowed and gradually convergent from in front of base to near apex where but slightly constricted, base bisinuate and distinctly impressed on each side of middle. Surface somewhat flattened, coarsely and deeply though not closely punctured, punctures coarser at base near median line which is impunctate and elevated into crista that extends at least one fifth of length of thorax.

Elytra distinctly wider than thorax, surface moderately depressed, coarsely punctured, intervals moderately convex, very minutely and sparsely punctulate.

Body beneath black, shining, sparsely punctured. Length 4–6 mm., average 5.5, breadth 1–1.5 mm.

Occurs so far as known only along the extreme coast belt from Monterey, Cal., to northern Washington. It is found beneath the bark of dead coast pines; the Monterey pine (*Pinus radiata* Don.) at Monterey, Cal., the Bishop pine (*Pinus muricata* Don.) at Inverness and Fort Bragg, Cal., and the beach pine (*Pinus contorta* Lond.) at Fort Bragg and Crescent City, Cal., and Humptulips, Wash., the last locality slightly inland. *C. piniphilus* and *scrobiculatus* as stated by Horn are undoubtedly the same, the type localities being not far apart, that of the former near the old Russian colony, Fort Ross, close to the mouth of the Russian River, and the latter, Point Reyes, both in the territory of the Bishop pine. *C. californicus* was also no doubt from the same locality as the former. Before 1845, there is hardly any probability of the Russians securing any but this coast species. A very common inland species from the yellow pine, which I have described later on, has long been confused with *piniphilus* and is so named in most collections. It is, however, a very distinct species.

The most pronounced characters of this species are its wedge-shaped thorax and quite evident basal thoracic crista.

C. lupini n. sp. Black or piceous, shining. Head quite smooth posteriorly, finely punctured between the eyes, the rostrum more coarsely punctured above and more closely at sides as well. Eyes moderate and but very slightly protruding beyond sides of head, diameter of head across eyes less than one third greater than breadth of dilated portion of rostrum. Sides of head gradually converging to eyes then more suddenly so to base of rostrum. Rostrum less than one half the length of thorax, just perceptibly arcuate, basal portion equal to apical, as broad as long, quite convex above and with ends wider than at middle, the apical portion qadrilaterally dilated and broader than long. Joints of funicle of antennæ gradually increasing in width outwards, the outermost joint broader than one half breadth of club.

Prothorax longer than broad, with sides distinctly rounded at base, broadest part just in front of base from which point the sides are straight and but slightly convergent until just in front of apex where they become rather suddenly constricted. Upper surface flattened near base, punctured beneath and at sides with moderately large, deep and well spaced punctures, above on outer side with somewhat finer and at base near median line with coarser, closer and deeper ones, and at base in front of scutellum, a short smooth rudimentary crista with an evident depression on each side. Basal margin just evidently bisinuate.

Elytra but slightly wider than thorax, somewhat convex above, striate, striæ moderately coarsely and serrately punctured, intervals convex and with a single row of barely perceptible punctures.

Body beneath punctured with moderate-sized and well-spaced punctures except on meta-episternum where closer together.

Length, 5 mm., width 1.25 mm.

Type in my own collection, paratypes in U. S. Nat. Mus. and Cal. Acad. of Sciences.

Occurs in the dead branches of two species of perennial and bush lupines (*Lupinus arboreus* Sims. and *L. chamissonis* Esch.), on the sand hills on the southern boundary of San Francisco, Cal. It most likely will be found in similar places at least as far south as Monterey and as far north as Tomales Bay. It is generally found in company with the more common *Rhyncholus pallens* Casey, which likewise lives only in lupines.

This species among West Coast species might be confused with small specimens of *C. piniphilus* Boh. and *C. ponderosæ*. From the former it can best be separated by the shape of the thorax. It also has a broader and shorter rostrum, a less flattened upper surface and less evident crista and the punctures of the thorax and elytra are generally finer and not so close together. From the latter it differs by the shape of the thorax, by the broader and shorter rostrum and the finer and less closely placed punctures. It is proportionally narrower and more cylindrical than either. More than fifty specimens have been examined and they all agree with the above though there is of course considerable individual variation. Immature specimens are more piceous than mature as is the case in general.

C. impressus Boh. Boh in Schönh. Gen. Curc., IV, p. 1019; Champion, Biol. Centr. Am. Insecta, Col., IV, Pt. 7, p. 63; *C. impressifrons* Horn, Proc. Am. Phil. Soc., XIII, 2 Z, p. 440 (nec. Boh.).

Black or piceous, shining. Head quite smooth except frons and rostrum which are moderately finely and sparsely punctured. Eyes moderately prominent, protruding well beyond the lateral margin of head, vertex with a deeply impressed linear puncture slightly above the eyes, diameter of head across eyes slightly less than one third greater than breadth of dilated portion of rostrum. Rostrum scarcely as long as half the thorax, basal portion about equal to apical, broad, slightly compressed laterally, at its beginning about two thirds the diameter of apical portion, sides gradually divergent to apical portion, the apical portion quadrilaterally dilated, somewhat flat and broader than long. Joints of funicle of antennæ short and broad, gradually increasing in width outwards, the outermost less than one half diameter of club.

Prothorax distinctly longer than broad, base bisinuate, sides at base rounded and constricted, broadest a little in front of base, then slightly rounded and convergent until near apex where but slightly constricted. Surface somewhat flattened above, moderately coarsely and closely punctured at sides, finer, more irregularly and sparsely punctured above at outer side, and more coarsely and closely punctured in triangular depression at base. Extending forwards through this basal impression is a somewhat elevated smooth carina which is a little less than one third the length of the thorax.

Elytra not wider than the thorax, moderately convex, striate, striæ moderately coarsely and serrately punctured, finer apically, intervals somewhat flat and indistinctly uniseriately punctulate.

Body beneath sparsely punctured, moderately coarsely in front and rather finely behind.

Length 3–3.5 mm., breadth .75 mm.

Occurs in southern Florida, Kissimee, Key Largo and Key West, Cuba and Jamaica, and in Mexico and the states of Central America.

The Florida specimens are generally rufous, the more southern darker, vide Champion. This is the species which was listed by

Horn as *impressifrons* Boh. and which is generally found in American collections as such. It was placed under *impressus* Boh. by Champion. It is readily separated from our Eastern species by its very distinct thoracic carina and from the Pacific species in the group having a convergent thorax, by its smaller size, generally lighter color and broader thorax. Its carina is also longer than is usual in any of the Pacific species.

C. ponderosæ n. sp. Black, somewhat shining. Head finely and sparsely punctured posteriorly, more coarsely and closely between eyes and base of rostrum, and finer again at apex of rostrum. Eyes not prominent, barely protruding beyond the sides of head, vertex with a deeply impressed and almost circular puncture slightly above the eyes, diameter of head across eyes one third greater than greatest breadth of rostrum. Rostrum about half the length of thorax, basal portion about equal to apical, as long as broad, with straight sides which are hardly divergent forwards, apical portion abruptly dilated, but only slightly broader than basal, quadrilateral, and slightly broader than long. Joints of funicle of antennæ gradually increasing in width outwards, the outermost about as broad as half diameter of club.

Prothorax slightly longer than broad, base bisinuate, sides constricted at base, rounded and broadest just in front of base, almost straight and slightly convergent to near apex where well rounded to constricted apex. Surface convex on sides and somewhat flattened above, coarsely, regularly and moderately closely punctured at sides, more finely at outer portion above and still more coarsely in median portion, especially at base where also closer. Basal portion at middle slightly depressed but with small area just in front of scutellum elevated but not cariniform.

Elytra distinctly wider than thorax, surface slightly convex, deeply striate, coarsely punctured, punctures coarser and deeper at base, intervals slightly convex, very minutely uniseriately punctured.

Body beneath sparsely and more finely punctured in median line, more coarsely and closely at sides and in front.

Length 6.5 mm., breadth 1.5 mm.

Type in my own collection, paratypes in U. S. Nat. Mus. and

California Acad. of Sci., Type locality, Tallac, Lake Tahoe, Cal., Sept., 1903.

This species, which may vary in size from 4.5–7 mm. in length, has been found in Wash. and in Cal., ranging in the latter state throughout its northern portion except the coast belt and extending along the western flanks of the Sierras to the Walker Basin. It has been found beneath the bark of dead yellow pine (*Pinus ponderosa* Law.), the Jeffrey pine (*Pinus jeffreyi* Lem.), and sugar pine (*Pinus lambertiana* Dougl.) in the sapwood of which it breeds. I have seen their workings extending to a greater depth than six inches. It most likely ranges throughout a good deal of the territory occupied by the western yellow pine and may also be found on other pines than those mentioned. It is our commonest western species and has been confused for a long time with *C. piniphilus* Boh., from which it is most distinct. Its closest relative in this country is *C. texanus* which it superficially resembles. The characters of head and thorax will however enable them to be separated.

C. quadricollis n. sp. Black, shining. Head finely and sparsely punctured posteriorly, more coarsely between eyes and on base of rostrum and finer again at apex of rostrum. Eyes not prominent, barely protruding beyond the lateral margin of head, vertex with a definite though not large circular puncture slightly above the eyes, diameter of head across eyes about one third greater than greatest breadth of rostrum. Rostrum about one half the length of thorax, basal portion about equal to apical, slightly longer than broad, with sides decidedly divergent anteriorly, apical portion abruptly dilated, slightly broader than basal, quadrilateral and broader than long. Joints of funicle of antennæ gradually increasing in width outwards, the outermost about as broad as half diameter of club.

Prothorax slightly longer than broad, base bisinuate, sides constricted at base, rounded and broadest just in front of base, thence just perceptibly convex to near apex where well rounded to constricted apex. Surface convex on sides and somewhat flattened above, especially posteriorly, coarsely, regularly and moderately closely punctured at sides, much more finely and sparsely at outer portion above and very closely at middle near base. There is a smooth median line at basal part of thorax which is somewhat elevated just in front of scutellum because of the depression of thorax at either side there.

Elytra distinctly wider than thorax and with sides evidently convergent to posterior third, surface slightly convex, deeply striate, coarsely punctured, punctures slightly coarser and deeper at base, intervals slightly convex at sides and flatter dorsally, and finely uniseriately punctured.

Body beneath moderately coarsely and sparsely punctured, more closely towards sides and in front.

Length 6.25 mm., breadth 1.5 mm.

Type in my own collection, paratypes in U. S. Nat. Mus. and Cal. Acad. of Sci.

Type locality, Carrville, north fork of Trinity river, Trinity Co., Cal., taken by myself under bark of *Populus trichocharpa* Hook. June 1, 1913.

This species, which may vary in size from 5–7 mm. and considerably with regard to shape and punctuation of thorax, approaching thereby more closely the appearance of *ponderosæ,* is in appearance closest to *ponderosæ* and in relationship closest to *platalea* Say. In fact, I believe it to be the western congeneric relative of the last. With *ponderosæ* it agrees most in general appearance and punctuation and with *platalea* Say in the type of the rostrum, a certain similarity of thorax, elongate appearance and shining aspect. A series of over thirty specimens collected at the same time and place was consulted. Another specimen collected at Hayfork, Trinity Co., Cal., Apr. 19, 1914, by Mr. Ralph Hopping, differs from mine only in having the sides of thorax more evenly rounded. Though related to *platalea* Say, large series of which I have consulted, it is however quite distinct, being far less flattened, more coarsely punctured, and so forth. From *ponderosæ* it can be best separated by the shape of the rostrum.

C. texanus n. sp. Black, somewhat shining. Head finely and sparsely punctured posteriorly, more coarsely at base of rostrum and coarsely and more closely at apex. Eyes moderately prominent causing side of head as a result to become suddenly constricted to base of rostrum. Vertex with a moderately deeply impressed almost circular puncture slightly above the eyes, diameter of head across eyes not quite twice as broad as greatest breadth of rostrum. Rostrum about half the length of the thorax, basal portion about equal to apical, broader than long, with straight and parallel sides, apical portion but slightly dilated, quadrilateral and broader than long. Joints of funicle of antennæ gradually increasing in width outwards, the outermost greater in breadth than one half diameter of club.

Prothorax slightly longer than broad, base bisinuate, sides from narrow basal constriction gradually rounded and widened to one fourth distance from base, then straight and but slightly convergent to one fourth distance from apex where broadly rounded to distinctly constricted apex. Surface convex on sides and dorsally in front but flattened in a basal and median triangular area, coarsely, regularly and moderately closely punctured at sides, somewhat more finely and distinctly at outer portion above and still more coarsely and closely at median basal portion. Basal portion just perceptibly depressed and without carina.

Elytra distinctly wider than thorax, surface slightly convex, deeply striate, coarsely punctured, punctures coarser and deeper at base, intervals almost flat, very minutely uniseriately punctured.

Body beneath sparsely punctured, more closely in front.

Length 6 mm., breadth 1.5 mm.

Type in my collection, paratypes in U. S. Nat. Mus. and Cal. Acad. of Science.

This species is described from a small series of specimens received from Texas through Mr. Beyer, some years ago. It was given me as *C. piniphilus,* probably because *C. ponderosæ,* which it closely resembles, then passed in most collections as that species. It is however, very distinct from *C. piniphilus* and distinguishable from *C. ponderosæ,* its closest relative in our fauna, by its more prominent eyes and shorter rostrum. Its thorax is also more bulbous, suggesting *C. concinnus,* but the eyes of this species are even more prominent and the apex of the rostrum much more dilated, besides having other distinguishable characters. It may possibly be the same as one of the species described from Mexico but does not seem to fit any of the descriptions that are given by Champion in the Biologia Centrali Americana, though it approaches *C. depressicolis* Boh. but does not quite agree with the figure given* not having the distinct depression and short carina at base of thorax and not such prominent eyes.

C. ellipticollis n. sp. Shining, piceous with somewhat rufous legs. Head with vertex very finely and sparsely punctured, more coarsely punctured between eyes and moderately coarsely and closely punctured towards apex of rostrum. Eyes moderately prominent, sides of head convergent forwards and bowing around eyes to base of rostrum, a deep and somewhat lengthened puncture between the eyes, diameter of head across eyes about one fourth greater than greatest breadth of rostrum. Rostrum about one half length of thorax, basal portion about equal in length to apical, as broad as long, with sides practically straight and parallel, apical portion abruptly and quadrilaterally dilated, broader than long and almost one third broader than basal portion. Joints of funicle of antennæ very gradually increasing in width outwards, the outermost joint slightly greater than one half width of club.

Prothorax fully one fourth longer than broad, base bisinuate, sides constricted for short area at base, thence rather regularly though narrowly arcuate until near apex where slightly constricted. Surface convex and very slightly flattened above, moderately coarsely, sparsely and somewhat regularly punctured at sides, more finely and irregularly above, and somewhat coarser near middle and basally, base slightly more depressed near median line, giving the point of the median line the appearance of a vague crista.

Elytra not wider than thorax, surface slightly convex above, deeply striate, coarsely and crenately punctured especially so in basal half, intervals convex, with series of very vague punctures.

Body beneath moderately coarsely and sparsely punctured at middle, apical segment more closely and prothorax more coarsely as well as closely punctured.

Length 5 mm., breadth 1. mm.

* Biolog. Central Amer. Insecta, Col., IV, part 7, plate II, Fig. 17.

Type in my own collection, paratypes in U. S. Nat. Mus. and Cal. Acad. of Science.

Described from a series of about fifty specimens collected during July, 1913, and in the summer of 1914, flying about the buildings of a ranch house on the outskirts of Porterville, Cal., by my friend, Dr. S. Davis. Another specimen has been seen in the collection of Mr. Ralph Hopping, from Kaweah, Cal. This is probably a very local species of the lower western slopes of the southern Sierras. It is one of the most cylindrical in our fauna and in many specimens has a perfectly elliptical thorax. It might possibly be confused with *C. crenatus* Horn., but the shape of the rostrum, the shining appearance and more finely and sparsely punctured thorax will readily separate it. It can be separated from our other western species by the fact that the thorax is as broad as the elytra, quite elongate and elliptical, as well as by its punctuation. From *C. concinnus* Boh., it is easily separated by its size and more shining surface and more elongate and finely punctured thorax.

C. concinnus Boh. Schön. Gen. Curc., IV, p. 1006, Horn, Proc. Am. Phil. Soc., XIII, 2 Z, p. 439.

Black, moderately shining. Head finely and sparsely punctured posteriorly, more coarsely forwards and on rostrum. Eyes quite prominent, vertex with a deeply impressed and linear puncture slightly above the eyes, diameter of head across the eyes about one third greater than greatest breadth of rostrum. Rostrum less than half the length of the thorax, basal portion about equal to apical, as broad as long, with straight sides divergent forwards, apical portion abruptly and widely quadrilaterally dilated and much wider than long. Joints of funicle of antennæ distinctly increasing in width outwards, the outermost almost two thirds the breadth of the club.

Prothorax slightly longer than broad, base bisinuate, sides strongly constricted at base, then broadly rounded at first, moderately arcuate for median half, and well rounded near apex to a moderately constricted apex. Surface convex except for triangular area at base in median line which is distinctly depressed and sometimes with a faint indication of a beginning carina, coarsely deeply and quite regularly punctured over entire surface, the basal depression cribrate.

Elytra in most cases not wider than thorax, moderately convex, deeply striate, striæ coarsely and serrately punctured, intervals moderately convex, at apex flatter and very finely uniseriately punctured.

Body beneath moderately punctured.

Length 4.5–5.5 mm., breadth 1 mm.

Occurs from Canada to Georgia and Missouri, N. Mexico and Arizona (Snow). This is apparently the commonest species in eastern North America. This species, though variable, should be readily separated by its convex thorax and peculiar rostrum from any of the other species found in its territory. The form from the Southwest cited, may prove to be not *concinnus*. It has been found under the bark of dead chestnuts in Pennsylvania by Mr. H. W. Wenzel. It no doubt also lives in other hardwoods.

I have previously stated that I believe *Cossonus impressifrons* Boh. to be but a variety of the above. If I am correct, this latter name will have priority over *C. concinnus* by several pages and *C. concinnus* will then have to be considered as the variety. Good series from near Harrisburg, Penn., show many individuals with the thorax less globose and flatter than in typical examples, with a very much more evident basal thoracic carina, and certain specimens have the thorax evidently narrower than the elytra. These seem to me to be what Boheman had and they came from the same territory where presumably Dr. Zimmermann secured his specimens. I give the original description of *C. impressifrons* for the sake of comparison:

"*Cossonus impressifrons*—Elongatus, niger, sub-nitidus, glaber, supra parum convexus, antennis pedibusque nigro piceis; fronte foveolate; rostra brevi crasso, apice obsolete carinato, basi, modice bi-sinuato; elytris confertim punctato striatis, interstitiis angustis, convexis, lævibus.

"Patria, Pennsylvania. A Dom. Zimmermann benevole communicatus. M. Schöh.

Rhyncholo chloropo nonnihil minor magis depressus, frons profunde foveolata, thorax latior, profundius punctatus, etc. Caput oblongum, nigrum, nitidum, inter oculos foveola oblonga, profunde impressum; vertice subtilissime, fronte evidentur punctulatis; oculi semi-globosi, nigri, rostrum latidudine capitis et vix illo longius, basi nonnihil constrictum, apicem versus perparum quadrangulariter amplicatum, convexum sat crebre punctulatum, nigrum, nitidum, antennæ brevis crassae nigro-picea, parce pilosæ, clava breviter ovata, sub-acuminata, delutiore, dense pubescente. Thorax—latitude media longior, anterius angustior apice truncatus, intra apicem leviter constrictus, margine apicis vix elevato, lateribus fere rectis, basi modice bi-sinuatus, supra planus, sat profunde, minus crebre dispersa punctatus, in dorso postico carinula obsoleta, longitudinali instructus, totus niger, nitidus, glaber. Scutellum parvum rotundatum, nigrum nitidum læve. Elytra antice sub-sinuata thoracis medio haud angustiora, humeris vix prominulis, rotundatis, lateribus non amplicata, apice ipso conjunctim rotundata, thorax vix duplo longiora supra parum convexa, distincta et crebra striata et in striis confertim punctata, interstiis angustis, convexis, lævibus, tota nigra, nitida, glabra, corpus subtus disperse, minus crebre punctatum, nigrum, nitidum; pectore canaliculato. Pedes brevis, validi, nigro-picei nitidi, remota punctulati; femoribus crasse clavatis, muticis; tarsis tenuibus dilutius piceis.—Bhn."

C. crenatus Horn. Proc. Am. Phil. Soc., XIII, 2 Z, p. 440.

Black, moderately shining. Head finely and sparsely punctured on basal portion, coarsely and more closely on rostrum. Eyes prominent, vertex with a deep and somewhat extended puncture between and above eyes, diameter of head across eyes over one third greater than greatest breadth of rostrum. Rostrum shorter than half the length of thorax, basal portion shorter than apical, broader than long, with straight and parallel sides, apical portion but slightly dilated and broader than long. Joints of funicle of antennæ barely wider externally, the outermost one half width of club.

Prothorax longer than broad, oblong, base bisinuate, sides rounded and constricted at base, straight or but feebly arcuate for middle three fourths, thence arcuate to slightly constricted apex. Surface convex and but slightly flattened above, coarsely deeply and moderately closely punctured and with a small and elongated crista in median line at base sometimes perceptible.

Elytra not wider than the thorax and twice as long, surface deeply striate, striæ deeper and broader at base, moderately coarsely and serrately punctured, intervals convex, narrow, with a single series of very minute punctures.

Body beneath black, shining, coarsely and moderately densely punctured. Legs black or piceo-rufous.

Length 3.5–5.5 mm., breadth 1.25 mm.

This beetle occurs in Oregon, Northern California, along the western flanks of the Sierras, in the San Bernardino Mts., in Arizona, Williams (Wickham) and the Huachuca Mts. (Wenzel), New Mexico (Knaus), and on Mt. San Pedro Martir, Lower Cal. It is found beneath the bark of dead yellow pines (*Pinus ponderosa* Law.), Jeffrey pines (*Pinus jeffreyi* Lem.), lodge pole pines (*Pinus contorta* var. *murrayana* Engel.), and no doubt other pines. It seems to prefer the areas of the logs that are somewhat dryer than those frequented by *C. ponderosæ*. This species could only be confused with one western species, *C. ellipticollis,* from which the peculiarities of rostrum and thorax will readily separate it, and with the eastern *C. corticola* Say. Typical specimens from California can be readily separated from the latter by the coarse and cribrate thoracic punctures, the more dilated apex of the rostrum and the antennal structures; the less typical Arizona specimens with their finer thoracic punctures, best by the rostrum and antennal structures. The proportionately larger club of *C. crenatus* Horn seems to be a reliable character. The two species are however related.

C. corticola Say. Curc. N. A., p. 24; Say, collected works, Ed. Lec., I, p. 291; Boh. Schön. Gen. Curc., IV, p. 1005; Horn, Proc. Am. Phil. Soc., XIII, 2 Z, p. 439; Champion, Biolog. Centr. Am. Insecta, Col. IV, Pt. 7, p. 48; *Borophlœus minor* Woll., Trans. Ent. Soc. Lond., 1873, p. 627.

Black, somewhat shining. Head finely and sparsely punctured, more coarsely and closely between the eyes and basal portion of rostrum, somewhat finer on apical portion; eyes quite prominent. Vertex with a deeply impressed and somewhat elongate puncture between and above the eyes, diameter of head across eyes over one third greater than greatest breadth of rostrum. Rostrum less than half the length of thorax, basal portion shorter than the apical, broader than long and with straight sides, apical portion but slightly dilated and wider than basal, much broader than long. Joints of funicle of antennæ very transverse and but gradually increasing in width outwards, outermost joint more than one half width of club.

Prothorax oblong, much longer than wide, base bisinuate, sides narrowed at base, thence arcuate to near apex where slightly constricted, surface moderately coarsely and closely punctured, disc at center frequently impunctured, slightly depressed behind on each side of median line.

Elytra elongate, parallel, somewhat narrower than the thorax, deeply striate, striæ seriately punctured, more coarsely basally, intervals narrow, flat at apex, finely uniseriately punctulate.

Body beneath shining, coarsely and on the thorax densely punctured.

Length 4–5 mm., breadth .80 mm.

Occurs from New York south to the Gulf States where more common, Missouri and through Mexico to Guatemala (Champion). This species, because of its broad thorax and almost undilated rostrum at apex could only be confused with one other species in our fauna, *C. crenatus,* Horn. It differs from this by having a more evenly rounded thorax and less carinate elytral intervals in addition to the differential characters given under *C. crenatus.* This is sometimes confused with *C. concinnus* Boh. but is readily separated by the rostral characters. *C. corticola* Say has been found under dead oak bark in New Jersey (H. W. Wenzel) and under dead pine bark at Tybee Island, Ga. (H. W. Wenzel). The normal food trees, I believe, are pines.

C. falli Champion. Biolog. Centr. Am. Insecta, Col., Vol. 10, pt. 7 (Dec., 1909), p. 55.

C. sulcirostris Fall. Can. Ent. Vol., 41 (1909), p. 169.

Moderately convex, piceous, legs rufous. Head almost smooth posteriorly, very finely punctured above eyes and at apex of beak, more coarsely between eyes and base of beak, a long distinct sulcus extending from the interocular puncture two thirds the distance to the apex; eyes moderately prominent; diameter of head across eyes about one third greater than greatest width of rostrum. Rostrum shorter than half the thorax, flattened cylindrical, basal portion shorter than apical and broader than wide, sides almost straight and gradually divergent to sides of apical portion which is but slightly broader than basal. Scrobes beginning near the tip, not distinctly visible from the front, joints of funicle gradually wider outwards, outermost more than one half width of club.

Prothorax longer than wide, base bisinuate, sides slightly narrowed at base, broadly arcuate or almost straight to apex where but slightly constricted. Surface very coarsely punctulate with somewhat lengthened punctures, closer at sides, more sparsely on the disk, with a nearly smooth area at middle towards base, a slight indication of carina at base in front of scutellum.

Elytra parallel, very slightly wider than the thorax, striæ of coarse punctures which are separated by half their longitudinal diameters. Striæ nearest suture deep, intervals nearly flat, very finely, uniseriately punctulate.

Body beneath coarsely, rather closely punctulate except the abdomen and middle portion of metasternum where the punctures are finer and sparser.

Length 4.3 mm., breadth .75 mm. San Jose del Cabo and Santa Rosa, Lower California.

The above description is modified from the original of Fall with the aid of a specimen kindly presented to me by him. His distinctive name was unfortunately preoccupied by a Mexican species. This species can be confounded with none other in our fauna, its parallel shape with thorax as broad as elytra, its broad, short and but slightly dilated rostrum with its long sulcus, and its peculiar punctuation readily separating it.

Mr. E. D. Kieth, of Providence, R. I., mentions among the rarities taken by him during 1914: *Pachnobia manifesta, Hadena inordinata, H. burgessi, Porosagrotis tripars, Agrotis violaris, Anticarsia gemmatilis, Anchocelis digitalis.*

SHORT STUDIES IN GEOMETRIDÆ. NO. 4. SUPPLEMENTAL NOTE.

By Richard F. Pearsall, Brooklyn, N. Y.

At the time my article was given to the Bulletin (Oct., 1914) I was still in the Catskill Mts., and my specimens were in Brooklyn. It was impossible therefore to designate types and cotypes (paratypes), as I now do.

The type ♂ and ♀ **emendata** are from the Big Indian Valley, Catskill Mts., and were reared from larvæ, with eight cotype ♀♀, one from Bon Accord, B. C., VI, 7.09, four caught specimens. Big Indian Valley, Cats. Mts., V, 25.05, VII, 6.04, VII, 15.04, VIII, 1.04, and two reared from larvæ as recorded.

The type of form **gynandrata** was captured in the Big Indian Valley, Cats. Mts., VII, 11.04. Three of the cotypes VII, 11.04, VII, 5.04, VII, 6.04, while a single one was reared from larvæ as previously noted.

The edition of this number of the Bulletin has been enlarged slightly to meet the great demand for Coleopterous taxonomy. But the advance requests have been so numerous that the Publication Committee cannot guarantee to deliver the single number. Synopses of important beetle genera will take a great part of the space for the entire volume to come. Hence all friends of entomology are urged to send for the volume, rather than the single number. The new series includes seven numbers of vol. VIII., price $1.40; five numbers of vol. IX., price $1, and the current vol. X., price $1, postpaid, for the five numbers.

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The collection of the late G. W. Kirkaldy has come into my hands. From his letters to me it would appear that there is loaned material contained therein. If the lenders will communicate with me, I shall return such of this loaned material as may still be in existence. J. R. de la Torre-Bueno, 14 Dusenbury Place, White Plains, N. Y.

WANTED.—Transactions American Entomological Society, vols. I., II., III., and IV.; Entomological News, vol. II., nos. 1 and 6; vol. IX., nos. 1 and 2; vol. X., no. 10; vol. XI., nos. 1, 3 and 5. Will purchase at reasonable prices. Howard L. Clark, P. O. Box 1142, Providence, R. I.

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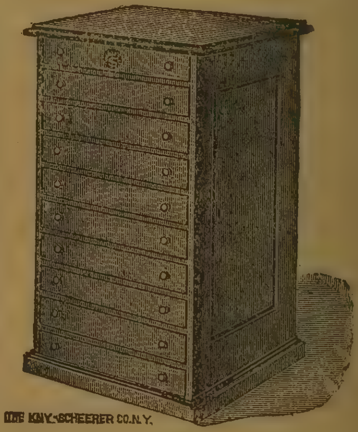
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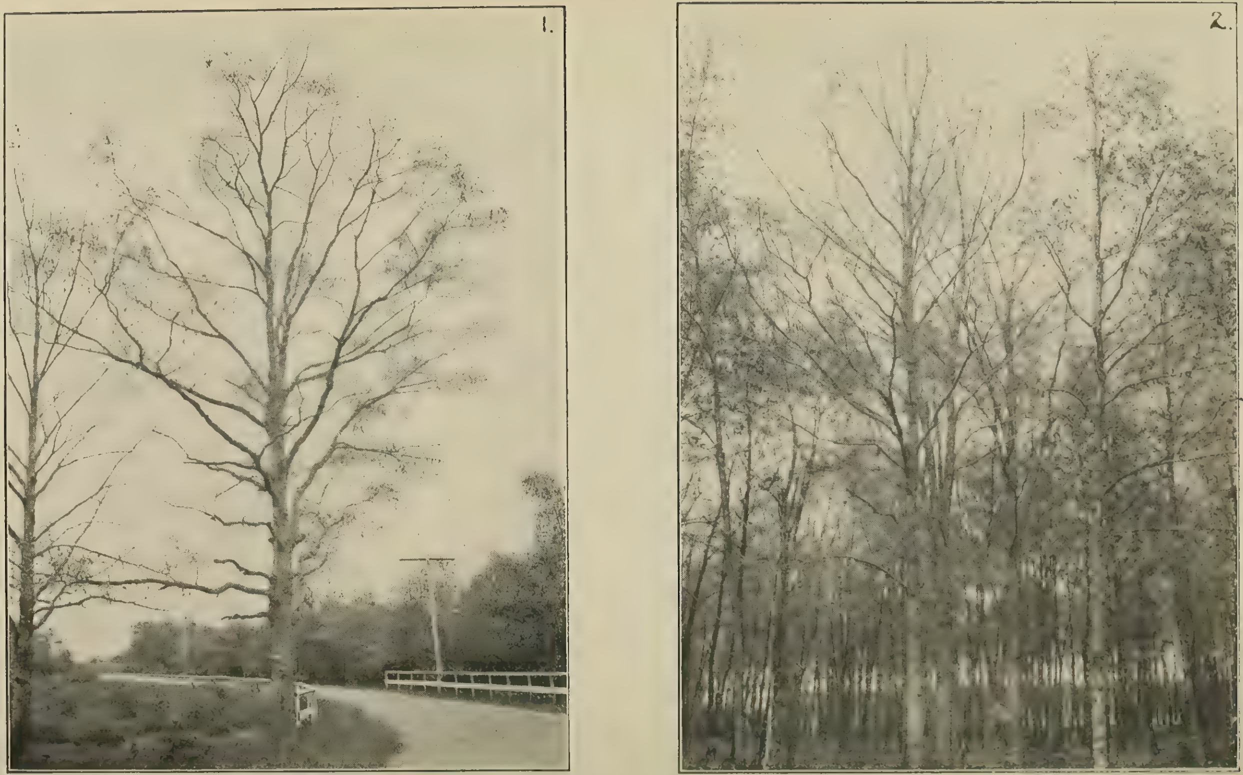

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BULLETIN
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SOME NEW BEETLES IN THE FAMILIES OSTOMIDÆ (TROGOSITIDÆ) AND CLERIDÆ FROM CALIFORNIA.

BY EDWIN C. VAN DYKE, Berkeley, Cal.

OSTOMIDÆ (TROGOSITIDÆ)

The genus *Nemosoma* Latr., has generally been misunderstood by American Coleopterists, chiefly from the fact that the two species, *parallelus* Melsh. and *cylindricum* Lec., have so long stood as our representatives of the genus. These we now know are quite dissimilar from true *Nemosoma* as represented by the European *N. elongatum* Linn., the species upon which Latreille founded the genus, and in fact belong in another genus. The recently described *Pseudalindria fissiceps* Fall, as pointed out by Mr. Charles Schaeffer, is however, a true member of the genus. A new species in my own collection also belongs here. The other species, *parallelus* Melsh., *cylindricum* Lec., *caviceps* Fall, and one new one belong in the genus *Corticotomus* Sharp, a genus founded upon the Guatemalan species, *C. basalis* Sharp. One other Central American species, *C. gracilis* Sharp from Panama has also been described.

Nemosoma is a small genus containing, so far as I know, one species in Europe, two in the Caucasus, one in the West Indies, two in California, one in Central America, and one or more in South America. The beetles are elongated and often very prettily marked and they live in forest trees, chiefly coniferous, and roam around in the tunnels of the Scolytidæ or bark borers, upon the eggs and larvæ of which they and their larvæ no doubt feed.

Corticotomus contains but the two species in Central America, the two in eastern North America, and two in western North America. They resemble very closely in shape and habits, the members of the preceding genus and two of them are similarly ornamented.

KEY TO THE NORTH AMERICAN SPECIES OF THE TWO GENERA.

Head deeply triangularly emarginate and impressed at apex, mandibles deflexed .... genus *Nemosoma* Latr.
  Black with pronotum and base of elytra rufous, larger and stouter, about five times as long as broad (Cal.) .... *fissiceps* Fall.
  Black with base of elytra rufous, smaller and more linear, about six times as long as broad (Cal.) .... *attenuatum* n. sp.
Head not triangularly emarginate and impressed at apex, mandibles uplifted .... genus *Corticotomus* Sharp.
  Front quite flat, head scarcely impressed behind.
    Piceous with base of elytra and often apex rufescent (Eastern States) .... *cylindricus* Lec.
    Rufous or castaneous throughout, with legs and antennæ somewhat lighter.
      With elytral intervals impunctate (Cal.) ...... *californicus* n. sp.
      With elytral intervals distinctly punctate (Atlantic States). *parallelus* Melsh.
  Front broadly concave, head transversely impressed posteriorly (Ariz., N. Mex., Col., Cal.) .... *caviceps* Fall.

Nemosoma Lat. Nouv. Dict. d'Hist. Nat., 1st ed., XXIV, Tab. Meth., p. 157, 1807; *Nemosoma* Latr. Gen. Crust. et Insect., 1809; *Pseudalindria* Fall. Trans. Am. Ent. Soc., XXXVI, No. 2, p. 126, 1910.

N. fissiceps Fall. *Pseudalindria fissiceps* Fall, Trans. Am. Ent. Soc., XXXVI, No. 2, p. 126, 1910.

This species seems to be confined to the Sierra Nevada Mountains of California. The specimens upon which the original description was based, were caught by myself in the early spring of 1898 at Forest Hill, Placer County, flying about woodpiles, presumably of Douglas fir (*Pseudotsuga taxifolia* Britt.) though some yellow pine (*Pinus ponderosa* Laws) might have been present. Mr. Ralph Hopping has captured four specimens in the mountains of Fresno Co., on yellow pine. I know of but one other specimen, in the collection of Dr. George Horn.

N. attenuatum n. sp. Form very narrow, attenuated, cylindrical, moderately shining, black with slight bluish lustre to upper surface; an oblique patch extending inwards from the humeri, the antennæ and tarsi rufous. Antennæ extending backwards just beyond margin of head, first joint moderate in size, joints 2–8 small and short, gradually wider externally and subequal in length to club, club robust and over twice as wide as eighth joint. Head elongate, about twice as long as wide, slightly divergent forwards to eyes where wider than either thorax or elytra; eyes moderate in size, rather flat and placed anterior to middle. Epistoma deeply triangularly emarginate and impressed, front with a longitudinal impressed line; surface rather finely punctured with elongated punctures anteriorly and with coarse sparser and rounder punctures posteriorly. Prothorax subequal in length to head, narrower posteriorly than elytra, gradually divergent forwards to head where of same breadth as base of head and elytra, base broadly arcuate and apex truncate, disc evenly convex, sparsely and finely punctured, more finely than on head, side margin fine. Elytra about as wide as apex of prothorax, over three times as long as wide and slightly longer than head and prothorax together; punctuation fine and sparse and with tendency to serial arrangement only near suture; disc without trace of striæ, a short rather deep linear impression without suture on apical depression. Head beneath and prosternum with a few coarse punctures, metasternum and abdomen finely and sparsely punctulate.

Length 4 mm., breadth, .75 mm.

Type in my own collection. Paratype sent to U. S. National Museum.

Described from a small series, collected by myself and beaten from dead boughs of Monterey Pine (*Pinus radiata* Don.) at Carmel, Cal., May 19, 1913. A few other specimens have since been secured by my friend, L. S. Slevin, at the same place. This species varies from .5 mm. smaller to .5 mm. longer than type.

It is related to *N. fissiceps* Fall but can be readily separated by its smaller size, more attenuated form, and by the fact that the thorax, femur and tibiæ are black whereas they are rufous in the other.

Corticotomus Sharp. Biolog. Centr. Am. Insecta, Col. II, part I, page 390, Sept. 1891.

C. cylindricus Lec. *Nemosoma cylindricum* Lec., Smith. Misc. Coll., Vol. VI, p. 65 (1863–65).

This species superficially resembles the preceding two, but can be readily separated by the characters of the head. From *C. caviceps* Fall, which it more closely resembles, it can be separated by the form of the head and by the elytral striæ being distinct to the apex. It is apparently fairly well distributed in the eastern states but scarce.

C. californicus n. sp. Form narrow, elongated, convex, but slightly shining, rufous, with antennæ and legs lighter than the body. Antennæ extending backwards just beyond margin of head, first joint moderate, joints 2–8 small and short, gradually wider externally and subequal in length to club, club robust and about twice as wide as eighth joint. Head elongate (excluding mandibles), broader than long, just perceptibly convex at sides, at eyes but slightly wider than thorax or elytra; eyes moderate and not prominent and situated anterior to middle. Front triangularly flattened and with shallow fovea at apex above and transversely impressed at junction with clypeus, surface moderately finely and sparsely punctured. Prothorax about ¼ longer than head, as wide posteriorly as base of elytra, thence gradually divergent forwards where just perceptibly broader than base of head, base broadly arcuate, apex truncate, disc finely and sparsely punctate anteriorly, punctures but vaguely indicated posteriorly, side margin fine. Elytra as wide at base as base of thorax, with straight sides which are just perceptibly divergent to near apex where broadly rounded, about three times as long as broad and considerably longer than head and thorax together, with striæ faintly impressed and punctured for basal three fourths with double series in close apposition, of faint, elongate, punctures, apical declivity without distinct impression. Head beneath and prosternum with a few fine punctures, metasternum and abdomen practically smooth.

Length, 3 mm., breadth, .7 mm.

Type in my own collection. Paratype sent to U. S. Nat. Mus. Type locality, Carrville, Trinity County, Cal.

Described from a small series of specimens collected by myself, by beating the dead boughs of Western Yellow Pine (*Pinus ponderosa* Dougl.), near Carrville, Trinity Co., Cal., in June, 1913, and at McCloud, Siskiyou County, Cal., July 1, 1914.

This species varies but little in size though somewhat in color, the more mature having the pronotum and apical portion of the elytra darker. It is probably closely related to *parallelus* Melsh., but evidently distinct by the characters given.

C. parallelus Melsh. *?Rhizophagus parallelus* Melsh., Proc. Acad. Phil., II, p. 108.

This species, which is found in the Atlantic States, under the bark of coniferous trees, is apparently rare. It seems from the description, for I lack a specimen, to closely resemble *californicus*. It can, however, be separated from that by the distinctly punctate elytral intervals.

C. caviceps Fall. *Nemosoma caviceps* Fall, Am. Ent. Soc., XXXVI, No. 2 (1910), p. 127.

This species is closely related to the eastern *C. cylindricus* Lec. but easily separated by the characters of the head and the fact that the elytral striæ are only evident basally, whereas in the latter, they are distinct to the apex. Found on the Huachuca Mountains, Arizona—9,000 feet (type locality); Las Vegas, Hot Springs, New Mexico (Barber and Schwarz); Colorado (Champlain); high Southern Sierras of Mariposa County on Sugar Pine (*Pinus lambertiana* Dougl.) (Hopping), Glenn County (Hopping), Trinity County (Hopping), Trinity Mts., near Carrville at over 7,000 feet alt. (myself). My specimens were beaten from western yellow pine (*Pinus ponderosa* Dougl.). One of my specimens was compared with the type by Fall and pronounced not to "differ in any appreciable way from my type of *N. caviceps*. The serial punctures on the elytra are just visibly larger in the type, but that is about all."

CLERIDÆ.

Enoclerus cupressi n. sp. Black, elytra with faint bluish sheen and with triangular orange red maculation at humeri and broad transverse bar of same color at middle, the latter not meeting at suture though close at its posterior border, a wedge of black separating the two portions, but reaching the side margin and extending in a narrow band forwards along the margin to humeral spots. Abdomen rufous. Slightly shining. Head, pronotum and elytra with moderate covering of rather long erect black hair and with a shorter and denser semi-erect black pile beneath, this latter changing to white on the red areas, legs and under side with a sparse covering of long gray hair, and a transverse bar of short gray pubescence near apex of elytra, this extending backwards along suture to apex. Head including the eyes, narrower than the thorax, moderately closely and coarsely punctured. Thorax about as broad as long, narrower than the elytra, disc rather finely, closely and rugosely punctured. Elytra about twice as long as broad, with prominent humeri, sides straight and parallel to beyond middle, then gradually rounded to truncate apex, surface granulose, puctures very fine on black areas, coarse and sparse on red. Beneath rather coarsely and sparsely punctured forwards and very finely on abdomen.

Length 7 mm., breadth, 2.5 mm.

Type in my own collection.

Type locality Carmel, Monterey County, Cal.

Beaten from the Monterey cypress (*Cupressus macrocarpa* Gord.), by Mr. L. S. Slevin. Also beaten from Sargent's cypress (*Cupressus sargenti* Jepson), on Cypress Ridge, near Fairfax, Marin Co., Cal., by myself. Ten specimens have been seen. This beetle no doubt lives both in the larval and adult stage upon the bark beetles, particularly *Phloeosinus cupressi* Hopk., and their larvæ.

There is a slight amount of variation in the color pattern as is usual. The median red markings almost meet in one specimen. It resembles superficially *Enoclerus eximius* Mann. It however is, in general, proportionately broader and stouter, with sides of elytra more parallel, the surface generally rougher though with the punctures less evidently defined except on the red patches, the black color of the elytra of a bluish black instead of a coal black, the markings of a richer orange red and the median patches not meeting at the suture as is the general rule in the other, where they not only meet but send an extension backwards along the suture, by the longer as well as the shorter hair of the thorax being inky black instead of the shorter gray, and by the general surface of the body being covered with a denser covering of hair, both short and long. *Eximius* also has a different life, being found exclusively upon the soft wood trees, such as the California laurel (*Umbellularia californica* Nutt.), the willow, the alder and the wax myrtle, and living, so far as I have observed, exclusively upon the Ptinidæ.

Hydnocera quadrimaculata n. sp. Black, moderately shining; antennæ except outer part of club, inner surface of anterior tibia and first tarsal joint and femur at junction with trochanter, and four elytral maculations, yellow; body very hairy. Head as broad as elytra at base, densely, finely rugose, front not impressed, clothed with sparse, moderately long, brownish black, erect hair. Thorax slightly narrower than the head, broader than long, rather finely, rugosely punctate, sides moderately and regularly dilated anterior to middle, pubescence like that of head only longer, intermixed with sparse shorter coat of ashy pubescence. Elytra but little shorter than the abdomen, about two and one quarter times as long as broad, sides nearly parallel, apices oblique on outer part and separately rounded near suture; humeri distinct; disc feebly convex; suture strongly depressed at base; surface with a greenish lustre, the anterior yellow maculations just back of base and less distinct, the posterior just back of middle, more or less circular and distinct, rather coarsely and posteriorly confluently punctured, an oblique depression running from humeri inwards and a more circular one just posterior to posterior maculation, pile on anterior half similar to that of thorax and on posterior half much shorter. Underside and legs more shining, with more of a greenish luster, more finely and sparsely punctured, and clothed with longer, erect and shorter semi-erect ashen pile.

Length, 5.5 mm., breadth, 1.5 mm.

Type in my own collection, a unique collected near San Diego, Cal., July 4, 1914, by Mr. E. P. Van Duzee and kindly presented to me.

This species can be easily separated from any of our other western species by its size and markings.

Galeruclerus trilobatus n. sp. Elongate, rufous, elytra a deep metallic blue, sides of meso- and metasternum and abdomen black, three outer joints of antennæ piceous; shining, moderately pubescent above, the hair erect and moderately long, antennæ eleven jointed, first joint of moderate size, second smaller, longer than broad and but slightly broader than third, third to ninth small and of same breadth but of gradually diminishing length, seventh, eighth and ninth transverse, ninth and tenth large and triangular, longer than broad, together as long as joints 2–9, eleventh two thirds as long as two preceding, oval with apex slightly constricted. Head grossly moderately, densely punctured, a slight depression on front between eyes, eyes prominent. Thorax longer than broad; about as broad at base as apex; sides with basal portion almost parallel though with slight constriction anteriorly, a broadly dilated and lobed median portion, and with a narrower, though slightly lobed apical portion; disc convex, punctured like head, with slight broad longitudinal depression near middle, base margined. Elytra about three times as long as broad, base slightly broader than thorax, gradually though slightly broader posteriorly, sides almost straight, apex conjointly rounded; very coarsely, deeply punctate, punctures arranged in irregular rows. Body beneath sparsely, finely punctured, and with few short prostrate hairs.

Length, 7 mm., breadth, 1.5 mm.

Type in my own collection.

This attractive beetle, a unique, was collected by myself, in the cañon of the south fork of the Kings River, Cal., at an altitude of about 5,000 feet, July 5, 1910. It was swept from the herbage near the river. A second specimen, smaller and less typical, with the elytra less bluish and the thorax less trilobed, but with the pile finer and denser than in *fasciata* and as in my specimen, is in the collection of Mr. H. F. Fall. It was collected in the San Bernardino Mts.

It can be readily separated from all others in our fauna by its striking color. Structurally, it somewhat resembles *G.* (*Cregya*) *fasciata* Lec., but it has the sides of the thorax more definitely trilobed, the punctures of the elytra less serially arranged and the series less well spaced, and the smaller joints of the antennæ proportionately much shorter than are those in *fasciata.* It has been suggested that this might be an extreme color phase of the last but aside from the size and characters just given, we find that as the specimens of *fasciata* get darker, the head, thorax and legs share the increase in pigmentation along with the elytra. In *trilobatus,* there is a very decided contrast between the clear rufous color of the head, thorax and legs, and the deep blue unicolorous elytra. *Fasciata* lives upon various Ptinidæ and presumably this species has similar habits.

DENDROTETTIX QUERCUS RILEY, AT YAPHANK, LONG ISLAND, N. Y.

By Wm. T. Davis, New Brighton, Staten Island, N. Y.

On September 3, 1912, a single male *Dendrotettix quercus* was collected at Yaphank, Long Island, N. Y. This is the first record from the State of New York of this sometimes very destructive grasshopper.

The insect was first described, but without a scientific name, by Lawrence Bruner, in Bulletin No. 13, U. S. Dept. of Agri., Div. of Entomology, in his report for 1886, printed in 1887, wherein he calls it "The Post Oak Locust of Washington County, Texas," and tells how by reason of its great numbers it had completely defoliated the trees of the forest. He also mentions the bright colors of the insect, its gaudy appearance and tells of its activity and shyness.

The species was next mentioned as *Dendrotettix quercus,* but without description, by Dr. Riley at the meeting of the Washington Entomological Society, held June 2, 1887, when he stated that he had reared it many years ago in Missouri through all of its stages. He adds: "The peculiarity of the genus is that as far as we know it is essentially tree-inhabiting."

The scientific name and description were first assembled by Dr. Packard who, in the Fifth Report of the U. S. Entomological

Commission, 1890, referred to the insect as *Dendrotettix quercus* Riley, MS., and quoted Bruner's description.

In Insect Life, Vol. V, p. 254, 1893, Dr. Riley definitely describes the genus and species and names the long-winged form *Dendrotettix longipennis.* This form was figured by Bruner, Bull. Div. Ent. U. S. Dep. Agric., No. 28 (1893), p. 14.

In the 1910 List of the Insects Found in New Jersey, *Dendrotettix quercus* is reported from Bamber, July 17, by Mr. Daecke. This was said at the time to be the only record of the species in the Eastern United States.

The author found this grasshopper on August 16, 1910, about a mile west of Lakewood, and in vast numbers at Ridgeway, N. J., in August, 1911. An account of this visitation and the damage done to the forest trees and some of the shrubs, was given in Entomological News for January, 1912. An idea of the great damage wrought by *Dendrotettix* at that time may be had by an inspection of the plate accompanying this article. Strange to say in August, 1912, not a trace of *Dendrotettix* could be found; there were none where there had been thousands of individuals the year before.

In 1914 Mr. Frederick Schott found a female *Dendrotettix* at Lakehurst, N. J., on July 26, and a male on August 15.

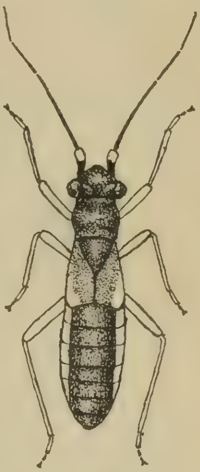
Most of the individuals of this species cannot fly, but occasionally both males and females have long wings. There are but very few individuals with wings of an intermediate character.

A CAPSID NEW TO OUR FAUNA.

By Chris. E. Olsen, Maspeth, N. Y.

Some time ago while engaged in a general housecleaning of my bugs I came across in a box of unidentified material four examples of what I had casually regarded as an hemipterous nymph. A second look showed it to be a mature insect of short winged form. Some years previously I had sent to Mr. Otto Heidemann a lot of material among which he had picked out *Pithanus maerkeli* H.

Sch. Subsequently Mr. A. C. Jensen Haarup, author of Danmark's Fauna Taeger, gave me a copy of his work. It contains an excellent figure and a note, to wit: "*P. maerkeli* H. Sch. Black; apical half of first antennal segment, sides of hemelytra and connexivum whitish yellow; by each eye often a narrow, light, somewhat oblique cross stripe; legs reddish. In the full winged examples the whitish on the hemelytra predominates and the prothorax widens considerably at its base. Long. 4½–5½ mm. Common all over in meadows, nearly always short winged." The accompanying drawing is copied from that in Jensen Haarup's work, with the abdomen changed to agree with my four specimens, in which it is slightly narrower and longer. My specimens were taken by sweeping a dry grassy hillside near Cating's Pond, Maspeth, L. I., N. Y., June 7–20, the year probably 1909. They add, I believe, a new genus and species to our fauna, and it may be worth noting that *maerkeli* is the type of the genus. It is not improbable that this brachypteron has escaped attention from its resemblance to a nymph One good look at the dorsal side of the abdomen tells the mature creature the seeming wing pads being mature brachelytra.



COLLECTING NOTES ON KANSAS COLEOPTERA.

By Warren Knaus, McPherson, Kansas

About six miles north of the Arkansas River in Reno County is a stretch of sand hills a mile or more in width, consisting of immense sand dunes, bare of vegetation, and caused by strong winds. The bottoms of these "blow-outs" contain pools of water except in very dry seasons The sand hill flora is quite different from that of the surrounding country, the margins of the pools and draws being lined with tall grass and sedges. The timber consists of scattered cottonwoods, willows and sand plums. The

Yucca, or "Spanish Needle," abounds, and the shifting sands expose their large bulbous roots. I have collected over this ground for a quarter of a century and hardly a year passes without my meeting with surprises in the beetle fauna. Species, common one year, will disappear for a term of years, while rarer forms occasionally become fairly common. The bare sands and the margins of the pools are the favorite resort and breeding places of Cicindelidæ. Of this family I have collected near Medora, Reno County, the following:

Tetracha virginica, Cicindela scutellaris, formosa, venusta, tranquebarica, repanda, hirticollis, var. *ponderosa, punctulata, lepida.*

These species are taken commonly in May and June and *scutellaris, formosa, venusta, tranquebarica, hirticollis,* and *punctulata* in September and the first half of October. *C. lepida* and *venusta* are the rarer forms.

On the sides of the dunes one will see little piles of fresh sand; digging down below the surface one frequently uncovers the light yellow colored *Geopinus fluvialis* Casey. In the latter days of September, or the warm days of early October, one can sometimes find the large Elaterid, *Orthostethus infuscatus,* feeding on decaying watermelons, where a patch of this fruit occurs on the farms covering a part of the sand hill country. Feeding with the Elaterid may also be found the large and showy *Tragidion coquus* and more rarely the variety *fulvipenne.* Gorging themselves on the melons may also occasionally be found, at this season of the year, the Euryomid, *Stephanucha pilipennis.* This species may also be found in May crawling over the surface of the sand or even burrowing beneath the surface.

The beautiful little Clerid, *Hydnocera Knausii* Schaeffer is sparingly found in sweeping the plants growing on the prairies and cultivated fields of this region. It occurs usually in May and June and is also found as late as September. Other *Hydnocera* taken by beating vegetation are *subfasciata, humeralis, pubescens, pedalis,* and *longicollis. Pedalis* is taken only rarely. *Lucanus placidus* occurs occasionally under pieces of wood or cow chips and sometimes a dead specimen is found lying on the sand.

I have never found, however, more than two or three specimens during any one season.

Phaneus carnifex is the common species in this region but I find *difformis* is fully as common. These vary considerably in size and even the color variation in some cases is quite striking. In 1886 I found my first specimen of *Bradycinetus fossator* in Rooks County along the south fork of the Solomon River. I had never seen any other specimens of this species in the state until 1913 when three specimens were taken on sand dunes near Medora, the latter part of May, but no specimens were found last season. This species is considered to be quite rare and is found in comparatively few collections in the United States. *Serica curvata* is taken occasionally, but never in large numbers, in the sand blow-out region in Reno County. They are found hidden beneath the sand during the day and I have taken a very few that were attracted to light in the early evening. *Anomala ludoviciana* Schaeffer is taken but rarely in the sand hill region by sweeping vegetation and is evidently a nocturnal flier.

Cotalpa subscribrata Wickham is a form of the beautiful goldsmith beetle and occurs over this portion of Kansas, extending northward into the sand hills of western Nebraska. It appears in early May and even the first specimens may be found in April. They continue into June. Some years it is not found at all, and other years, during a day's collecting, I have never taken more than a dozen specimens. In 1913, however, it swarmed in large numbers over the sand hill region near Medora and every clump of willows harbored from a half dozen to a score or more. During the day they are found clinging to the willow foliage, and are occasionally found on cottonwood leaves, and they may be picked up from the bare sand, many of them dead but in perfect condition. They fly rather lazily and noisily during the day time but their full activity is evidently developed during the early part of the night. They were much more numerous in 1913 than any year I have observed them during my collecting in this region and while they were still fairly common last season it is probable that the present season will see their almost complete disappearance.

Dascinetus trachypygus is the common species over this region and apparently spends the day time in burrows around the edges of damp pools. They are commonly attracted to lights at night. During the season of 1913, the latter part of May, I had occasion to pull some sedges from the margin of a pool just outside the water line, as I wished to examine the roots. The plant, however, broke off above the roots and I noticed that a hole had been eaten through the stalk. On digging down I found that the adult beetle had attacked the sedge and eaten a hole entirely through it. Whether this was done for the juices would be hard to determine, but I can think of no other reason. A larger species of this genus, *puncticollis* Casey, occurs as far east as the Medora region, but in lesser numbers than *trachypygus,* and is also fairly common in the region around Dodge City and southwest.

One of the best finds made in the Medora region was in the latter part of May, 1913, when I uncovered two specimens a ♂ and ♀, of *Strategus mormon,* this being the first record of this species in the state and I believe the first authentic record of the genus occurring in Kansas. The holes made by this beetle are very distinct from those made by *Phaneus carnifex* or *difformis,* as they are fully twice the diameter. The two specimens of *Strategus* were found three or four hundred yards apart, their burrows extending almost vertically into the sand, deflecting less than 15 degrees. Each had penetrated to a depth of about 12 inches into the moist sand. None was taken last season, but during the coming seasons the dunes will be thoroughly inspected for additional specimens of this species.

In the Proceedings of the American Philosophical Society dated December 19th, 1879, pp. 400–401, Dr. Geo. H. Horn described *Euryomia* (*Euphoria*) *aestuosa* from a unique ♀ presented to him by Dr. S. V. Summers of the U. S. Army, the specimen having been taken in Kansas. During my long years of collecting in this state I have always kept a close lookout for this species but without success until May, 1913, when a single specimen was taken from the sand hill region near Medora. I recognized it at once as the long sought species and find that the specimen, which is evidently a ♂, compares very closely with Dr. Horn's description except in the color of the thorax. In my specimen this is entirely black while in the original description it is said to have a large median piceous space. The difference in sex, however, may reasonably account for the difference in color. In his remarks on the species, Dr. Horn says: "It is probable that the color will vary from this unique." In the original description he says "In the unique ♀ before me the club of the antenna nearly equals the stem." In my specimen the club of the antenna is longer than the stem.

Cremastochilus nitens is found almost every season during the hottest part of the day flying rarely over the sand dunes but more commonly found early in the morning buried in the sand under sticks or other objects. They are not difficult to capture in the cooler parts of the day but during the warmer parts they must be picked up quickly when they alight on the sand, or a net thrown over them, as they sit quietly only a short time after alighting before they again take flight.

The strikingly colored Cerambycid, *Cyllene decorus* is found sparingly the latter part of summer on the golden rod blossoms. As the yellow is so closely matched to that of the goldenrod and the body is frequently covered with pollen they are not readily distinguished and frequently escape detection.

The rank grasses growing over the low places at the bottom of the blow-outs furnish food to various species of *Sphenophorus*. Among those taken over this region may be mentioned the destructive species *maidis* and *destructor* Chittenden, that feed upon the growing corn, the larvæ eating in the center of the plant above the root and frequently dwarfing or killing the plant. So far as I have observed, however, these have not yet occurred in sufficient numbers to damage seriously the growing fields of corn.

The season of 1913 was one of the dryest and hottest ever recorded in this state. From the middle of May until well along into September very little rain fell and the temperature frequently went up to 108 or 112 degrees. The bare sand hills became intensely hot on the surface to the destruction of all forms of insect life. Collecting that season showed that the insect fauna decreased 50 to 75 per cent. Where in ordinary seasons numerous species of small forms could be uncovered by turning over vegetation and debris, this season they had almost entirely disappeared. During the latter part of May I found on the north slope of a sand dune, many specimens of a dead *Sphenophorus.* They had apparently lit in swarms on the sand and a large proportion had been overcome by heat before they could rise in flight, as many of them still had their wings protruded. They appeared to be different from my Kansas *Sphenophorus* and specimens sent to H. C. Fall of Pasadena, California, brought the reply that after comparing the specimens with his entire list, he thought it might be *saltauii* Chittenden, basing his determination on Chittenden's recently published description of this species. Specimens were sent to Mr. Chittenden who confirmed Dr. Fall's identification. This species was described from specimens taken from the Rocky Mountain region, but the finding of it in Central Kansas shows that it covers a wide range of territory and undoubtedly in certain seasons it may become quite destructive to plant life.

An important part of the work of The State College of Forestry at Syracuse is that obtained at the end of the Sophomore year in the Summer Camp. At this camp, which lasts throughout the summer, the students receive practical instruction, not only in forestry in the more restricted sense but also in the allied sciences such as Botany, Zoology and Entomology.

The entomology work consists largely of field work—the observation, note taking, and collecting of insects found in the forests, especial attention being paid to those which have either a beneficial or injurious effect upon the forest. In other words the attempt is made to study the insect not as dead and dried specimens but as active forces affecting the production and maintainance of the forest.

The field work is necessarily supplemented by a certain amount of laboratory study and each student is required to collect and submit a small collection of forest insects.

The College also maintains each year in the Adirondacks a summer camp for popular forest instruction which is open to anyone above the age of sixteen. This furnishes an excellent outing at a very moderate cost and offers an excellent opportunity for any entomologist to spend a month in the North Woods in collecting and observing Adirondack forms.

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PROCEEDINGS OF THE BROOKLYN ENTOMOLOGICAL SOCIETY.

The regular meeting was held at 185 Brooklyn Ave., November 12, 1914, with president Davis, thirteen members and five visitors present, the latter including Dr. W. T. M. Forbes, Chas. Scott, a member of the Society thirty years ago, and Dr. Vitor, well known from the monthly records he has prepared for many years of the birds visiting Prospect Park.

Harrison Tietz, 249 Johnson Ave., Richmond Hill, was unanimously elected an active member.

Mr. Weeks showed a live *Cychrus elevatus* taken from his cellar in Yaphank, Nov. 12, and reported *Leucania unipuncta* flying in the warm evening of November 11. He also spoke of turning up nests of the yellow jacket, probably *Vespa vulgaris,* in his fall ploughing. Some of these nests were placed on the ground under inverted pails. The busy wasps lost no time in digging in the soil and reburying their nests.

Mr. Dow spoke of the new Museum and the active societies of young naturalists in Los Angeles, Cal., and asked members to bring to the next meeting pupæ and cocoons of our familiar Lepidoptera for the encouragement and experimental efforts of our Pacific Coast friends.

Mr. Torre-Bueno exhibited a box containing the eleven species of Veliinæ found east of the Mississippi River, one still with manuscript name. Six of the species are in our local fauna. A synoptical table of the three genera and all the species is to be published.

Mr. Dow read a paper entitled: The Five Thousand Dollar Butterfly. It spoke of the popular idea existing for at least a century throughout Europe and this country that there is at least one butterfly which any one might catch and for which some collector is anxiously waiting and willing to pay $5,000. A few years ago a newspaper published a story that the United States National Museum had paid $20,000 for a single fly. The myth of the $5,000 butterfly was printed less than a year ago in a magazine devoted to general science. For twenty years reports have been frequently published that an English collector was willing to pay $1,000 to $5,000 for a particular species of flea supposed to inhabit the fur of the arctic fox. Such stories have made endless trouble for all the large museums, since many thousands of persons have called or written claiming $5,000 for some specimen, generally not worth five cents. A flea new to science, taken from some very rare animal, might fetch $5, if the purchasing collector happened to be in particularly good humor. In former years unique butterflies have fetched $1,000 and even more, but their total can be counted on one's fingers. Nowadays it is doubtful whether a hundred specimens a year can be taken in this country which would fetch $5 a piece. Only an expert could detect such a one. For the untrained, or even the average collector, there is little cash market, not enough to make the effort really worth while. One of our best known professional collectors wrote not long ago that he could barely average $5 a week, the year round.

Nevertheless any collector of insects can add not a little to his income by selling, not rare specimens, but common things taken in large lots, suitable for biological study, especially in colleges. The giant water bugs, *Belostoma* or *Benacus,* always fetch a good price considering that if one sees a swarm at electric light a quart pail could be filled with then in half an hour. The *plexippus* butterfly is the type for study in the schools of many states and the dealers handle tens of thousands each year. Pupæ and cocoons are always in some demand.

It is pleasant, but not profitable, reading that the type of the beetle, *Amblychila cylindriformis,* fetched $300, and the second specimen $50. It can now be bought for 50 cents. The first two *Sphinx franckii* captured were bought for not less than $300 each, but they have since been bred in numbers.

Prolonged discussion followed, especially of reminiscences by Messrs. Franck and Doll. A Scotchman is said to have paid $2,000 for a *Drurya antimachus,* when this remarkable species from Africa was almost unknown. He willed this specimen to the famous Strecker. Rothschild is said to have paid $1,500 for his first specimen. Since the world has grown smaller they have sold as low as $7 each. Neumogen is said to have paid $700 for a single specimen of some butterfly. Rothschild paid $2,000 for the Meyer collection, its only great rarity being the *Actias Jehovah* which Strecker described and afterwards wrote at great length defending his choice of a name. A New Jersey collector had two aberrant *Papilio,* one *turnus,* the other *troilus.* The first dealer applied to bid $5 for the pair. Another dealer, one of our members, secured them for $20. One fetched from the ultimate collector $350, the other $200. A big price would joyously be paid for a *Vanessa antiopa,* if provably caught on British soil. Caught elsewhere it is not worth a cent. One species has become extinct in modern times, a little *Chrisophanes,* the English haunt of which has been drained. Big prices have been recorded for historic specimens, types from which the masters described well-known species.

The regular meeting was held December 10, with President Davis in the chair, and twelve other members present.

Mr. Weeks reported a specimen of *Xylorictes satyrus,* alive and kicking November 20. Mr. Frank read a paper on the experiences of his last winter in Florida. It covered his southward progress from Chattanooga, Tenn., to St. Petersburg, Fla. It spoke of the difficulty of collecting, avoiding rattlesnakes, of the daily catch with a diary of weather and captures each day, of the species taken singly or in vast abundance and of a thousand and one details impossible to enumerate until his whole record may be printed.—R. P. Dow, *Recording Secretary.*

OFFERTA ET DESIDERATA

WANTED.—Pupæ of *Papilio ajax* and *rutulus*. Ward's Natural Science Establishment, 84 College Ave., Rochester, N. Y.

All kinds of Chrysalids, Cocoons, and Pupæ wanted in exchange for North American lepidoptera. Address: Herman H. Brehme, 74 Thirteenth Ave., Newark, N. J.

Florida Insects of all orders, also Fish, Batrachians, Reptiles, Shells, and Marine Invertebrates sold by A. G. Reynolds, Gulfport, Fla.

WANTED.—No. Am. Cerambycidæ and Buprestidæ, especially *Agrilus;* will collect insects of any order in this locality for exchanges in above families. C. A. Frost, 26 Pond St., Framingham, Mass.

The undersigned will greatly appreciate receiving records of New Jersey species not listed in Smith's Insects of New Jersey.—Harry B. Weiss, 272 Hale St., New Brunswick, N. J.

Offer wanted for two cabinets, one of 24 book-form boxes, the other of 20 drawers; includes about 1,800 fine specimens, butterfly boxes, spreading boards, etc. Write to G. Wm. Reinecker, 66 Nelson Ave, Jersey City, N. J.

The collection of the late G. W. Kirkaldy has come into my hands. From his letters to me it would appear that there is loaned material contained therein. If the lenders will communicate with me, I shall return such of this loaned material as may still be in existence. J. R. de la Torre-Bueno, 14 Dusenbury Place, White Plains, N. Y.

WANTED.—Transactions American Entomological Society, vol. IV.; Entomological News, vol. II., nos. 6 and 10, or the whole volume.—Howard L. Clark, Box 1142, Providence, R. I.

Fine specimens of the large Mantis, *Paratenodera sinensis,* collected at Mt. Airy, Philadelphia, Pa., offered in exchange for North American Lepidoptera—Philip Laurent, 31 East Mt. Airy Ave., Philadelphia, Pa.

I shall be prepared to raise pupæ during the season of 1915 in exchange for exotic Lepidoptera. Wish to hear from those interested quantity and species they desire.—H. S. Gladwin, Madison, N. J.

Shall spend summer vacation in mountains of southern California and will collect in any order for exchange for Lepidoptera. Write Clifford Grant, 5335 Tenth Ave., Los Angeles, Cal.

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BULLETIN
OF THE
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Vol. X JULY, 1915 No. 3

TYPES OF FITCH'S SPECIES OF MEMBRACIDÆ.

By W. D. Funkhouser.

(Contribution from the Entomological Laboratory of Cornell University.)

Eighteen species of North American Membracidæ were described by Dr. Asa Fitch, of which six have been reduced to synonymy by later students. Of the remaining twelve species, seven have been placed in other genera than those designated by the author while the other five stand as described. Sixteen of these species were described in the Fourth Annual Report of the Regents of the University of the State of New York on the State Cabinet of Natural History, Albany, February 22, 1851, under the title "Catalogue with References and Descriptions of the Insects Collected and Arranged for the State Cabinet of Natural History. By Asa Fitch, M.D." The other two were described in the Third Report of the Insects of New York in the Transactions of the Agricultural Society in 1856.

On account of the fact that in recent years a large number of new forms of the species of the family have been described, and because some of these must be compared with Fitch's types before their validity can be established, it is of much importance that the type specimens of Fitch's species be located if possible.

After the Fitch collection had been broken up and parts sold to various collectors, the balance was purchased by the U. S. National Museum and is now a part of the collection at that institution. The specimens are numbered and the numbers correspond to those in Dr. Fitch's notebooks. Two of these notebooks (of the families Psyllidæ and Aphididæ) are now in the National Museum. Parts of the Fitch collection, on the other hand, are still in the New York State Museum at Albany, the specimens bearing likewise the original labels and numbers of Dr. Fitch. In the case of the family Membracidæ there are specimens of the same species collected and determined by Dr. Fitch in both the National Museum and in the N. Y. State Museum and there seems to be some dispute as to the validity of the types in both museums.

In 1893 Dr. F. W. Goding published in the Canadian Entomologist (Vol. XXV, No. 7, 171–172 pp., No. 8, 196 p.) under the title "Fitch's Types of N. A. Membracidæ" a review of those specimens in the collection at Washington which he considered as the types. It happens, however, that specimens of most of these same species, also from Fitch material, are in the Albany collection where they are also considered as types, and some of these differ materially from the specimens studied by Dr. Goding.

Through the courtesy of Dr. J. C. Crawford and Mr. Otto Heidemann, of the National Museum, and of Dr. E. P. Felt, of the New York State Museum, I have been permitted to examine the specimens under discussion in both museums and have carefully compared both sets of material with the original descriptions of Dr. Fitch. Dr. Felt and Mr. Heidemann have both also very kindly furnished me with considerable data on the subject which tends to show that the material in the National Museum is not all type material and that the location of the type specimens has not been hitherto established.

The specimens found in the two collections with their respective numbers are as follows:

	Specimen Number	
Species	Albany.	Washington.
Smilia castaneæ	669, 670, 671	4978
Smilia querci	672, 673	6931
Smilia guttata	674, 675	
Smilia auriculata	676	875
Cyrtosia fenestrata	678	6234
Telamona unicolor	684	1800
Telamona fasciata	685	14,496
Telamona concava	686	2133
Telamona fagi	687	9844
Telamona tristis	689	102
Telamona coryli	690	

Telamona querci	691, 692	3109
Telamona reclivata	693	5979
Thelia cratægi	697	4416
Tragopa dorsalis	698, 699	133, 138, 139, 3659
Uroxiphus caryæ	700, 701	
Ceresa taurina		3668
Ceresa brevicornis		1875

Students of the family will at once note that the first sixteen of the species numbered in the Albany collection bear numbers which correspond exactly with those given to the specimens of the species described in the Fourth Report.

Dr. Fitch unfortunately did not always designate type specimens as such. Mr. Heidemann quotes Mr. E. A. Schwarz, who purchased a part of the Fitch collection years ago, as stating that those specimens which carry a number in red ink and *marked with a red line across the label* are the true types. This method of designation, however, does not appear to have been followed in the collection of Homopterous insects, and from other material of Fitch's which has been examined it appears that this type of label was occasionally used for specimens clearly not type. On the same subject Dr. Felt has kindly allowed me to quote from a letter dated December 18, 1900, from Dr. Fitch's daughter, Mrs. M. F. Andrews, of Marshalltown, Iowa, as follows:

> "I do not think Father ever used the word 'type,' but a character instead, or [T]. I know there were some of his types in the collections . . . and also that some of them were destroyed. . . ."

Also under date of January 11, 1901:

> "The numbers refer to a registry and description in a manuscript catalogue. Small insects were attached to triangles of paper, on pins, with numbers beneath. . . . The capital [T] of course was for type."

The type label as above described has, likewise, not been found on any of the insects examined.

The specimens in the National Museum bear various labels of which one in each instance bears a number in red ink presumably written by Dr. Fitch himself and evidently referring to his notes. The other labels, according to Mr. Heidemann, were written by the late Dr. Ashmead who endeavored to designate Fitch's types from the original descriptions and entered these names in the type book of the National Museum. Only two of these specimens bear the large, well-known Fitch label written in his own handwriting. These are Nos. 4416 (*Thelia cratægi*) and 875 (*Thelia auriculata*). None are marked in any way which would suggest that they were considered as types by the author, and the specimens differ in many respects from the original descriptions.

The specimens in the New York State Museum, on the other hand, are in a special case which bears the following label printed by pen by Dr. Lintner and subsequently acknowledged as his own to Dr. Felt:

HOMOPTERA.

Arranged by Dr. Fitch in 1850; Transferred to this Case in 1879.
Contains 54 species and 5 subspecies of TYPES of Dr. Fitch.
See Fourth Report of N. Y. State Cab. N. H., pp. 43–69.

The insects in this box have evidently been prepared for a special exhibit and are carefully labeled by means of printed strips above the pins and printed specimen labels with names and numbers on the pins. The family names are on green paper, the generic names on orange and the specific names on white. The specimen label bears two lines, the first containing the popular name in plain type and the second the scientific name in italics. Each specimen bears also a printed number which corresponds to that in the Fourth Report. It was at first thought that these labels might have been cut from the pages of the original publication but comparison proves that this is not the case. The type is of a different font and the arrangement of words is not identical. Regarding this point Dr. Felt has kindly furnished me with an excerpt from a letter from Dr. Fitch dated January 31, 1850, and addressed to a dear friend, Dr. George F. Horton, as follows:

> "Christmas eve . . found me in Albany, putting up a suite of specimens of our Homopterous insects, (the old Linnæan genera *Cicada, Fulgora, Tettigonia* and *Aphis*) for the State Cabinet of Natural History. Of these I have gathered and made out 130 species, embracing 300 sexual and other varieties. Oh but one short week ago I was very busy, very tired, and very, very anxious to finish my job and get back to my own quiet, comfortable home. And Christmas day was anything but a holiday to me; and I felt like uttering maledictions upon the printers, because they would not work enough that day to finish my labels."

This excerpt clearly refers to the list of Homoptera prepared for the State Cabinet of Natural History and apparently indicates that he had the special labels printed for that collection.

The above described case in the Albany Museum not only contains the species of Membracidæ noted in the original publication and no others, but the number of specimens, male and female, of each, is identical with those mentioned in that publication and *the numbers correspond exactly with those of the descriptions.* It would appear, therefore, that the authenticity of these specimens would seem to be established beyond reasonable question. Still more important, however, is the fact that these specimens agree upon examination with the original descriptions to such an extent as to remove any doubt as to their being the identical insects which the author had before him. I believe that this is proven conclusively by the fact that certain odd specimens, *e. g.*, No. 671 (p. 49, Fourth Report), No. 673 (idem), No. 675 (idem), designated in the original published description as varieties or subspecies on account of peculiar markings, *show these peculiarities exactly as described.* This would seem to prove that the type specimens of the sixteen species described in the Fourth Report are those in the New York State Collection.

The only specimens of the other two species—*Ceresa brevicornis* and *Ceresa taurina*—known to be from the Fitch collection appear to be those numbered 1875 and 3668 respectively in the U. S. National Museum. These may or may not be type specimens. The original descriptions of both are very meager, that of the latter being merely a comparison with *C. bubalus* Fabr., and being credited to Harris (Cat. Mass.). Since, however, these two specimens represent the only ones from the Fitch material which are available for study they may well be designated as types for purposes of comparison.

The following list is therefore offered as a designation of the type specimens with the synonymy indicated:

In New York State Museum.

Smilia castaneæ	No. 669, *Atymna castaneæ.*
Smilia querci	No. 672, *Atymna querci.*
Smilia guttata Subsp.	No. 674, *Smilia camelus* Fabr.
Smilia auriculata	No. 676, *Archasia galeata* Fabr.
Cyrtosia fenestrata	No. 678, *Cyrtolobus fenestratus.*
Telamona unicolor	No. 684.

Telamona fasciata	No. 685.	*Telamona unicolor.*
Telamona concava	No. 686.	
Telamona fagi	No. 687,	*Heliria scalaris* Fairm.
Telamona tristis	No. 689.	
Telamona coryli	No. 690,	*Telamona tristis.*
Telamona querci	No. 691,	
Telamona reclivata	No. 693.	
Thelia cratægi	No. 697,	*Glossonotus cratægi.*
Tragopa dorsalis	No. 698,	*Micrutalis dorsalis.*
Uroxiphus caryæ	No. 700,	*Microcentrus caryæ.*
Entilia sinuata torva subsp.	No. 647,	*Entylia sinuata* Fabr.

In U. S. National Museum.

Ceresa taurina	No. 3668.
Ceresa brevicornis	No. 1875.

SOME NEUROPTERA FROM THE UNITED STATES.

By Rev. Father Longinos Navás, S.J.,
Zaragoza, Spain.

All the Neuroptera here recorded were sent to me by my friend, Mr. J. R. de la Torre-Bueno, White Plains, N. Y.

Family LIBELLULIDÆ.

1. *Libellula lydia* Drury. White Plains, N. Y.
2. *Libellula luctuosa* Burm. One male from Waban, Mass., near Boston.
3. *Libellula vibrans* Fab. var. *incesta* Hag. Waban. Two young examples.
4. *Celithemis eponina* Drury. Waban.
5. *Erythemis simplicicollis* Say. Waban.
6. *Nannothemis bella* Uhler. Yaphank, L. I., July 4, 1913.

Family ÆSCHNIDÆ.

7. *Gomphus exilis* Sel. Waban; Great Notch, N. J., May 30, 1906.

Family AGRIONIDÆ.

8. *Agrion maculatum* Beauv. Lakehurst, N. J., C. E. Olsen, July 4, 1909.
9. *Enallagma hageni* Walsh. Waban.

Family MYRMELEONIDÆ.

10. *Hesperoleon abdominalis* Say. Van Cortlandt Park, N. Y., Point Pleasant, N. J., July 26, 1905.

11. **Hesperoleon placidus** sp. nov. (Fig. 1.)

Similis *blando* Hag.

♂. Caput flavidum; facie linea longitudinali prope oculos et alia transversa pone antennas, fuscis, vertice tuberculis punctisque fuscis; oculis fuscis; palpis pallidis, apice fuscescentibus; antennis fortibus, sensim in clavam dilatatis, fuscis, apice articulorum anguste flavido, clava inferne flavida.

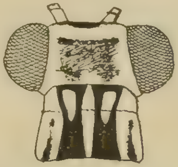

FIG. 1. *Hesperoleon placidus* ♂ Nav. Head and prothorax. (Col. m.)

Prothorax latior quam longior, antrorsum leviter angustatus, inferne flavidus, superne flavidus, duplici fascia longitudinali centrali, in medio anteriore maculam elongatam liberante; striola param definita in medio posteriore inter fasciam et marginem lateralem, fuscis. Meso- et metanotum flava, 4 lineis longitudinalibus fuscis. Pectus flavum, fusco striatum, vel potius fuscum, flavo maculatum.

Abdomen dense pilosum, inferne fuscum, superne flavidum, linea longitudinali media angusta et alia laterali, fuscis; cercis cylindricis, apice obtusis, segmento precedenti longitudine aequalibus, fusco pilosis, testaceis, externe fuscis.

Alæ hyalinæ, acutæ, reticulatione subtota fusca, albido varia, stigmate albido; area apicali serie venularum gradatarum instructa.

Ala anterior area apicali venulis gradatis partim in duas series positis, area radiali 4–5 venulis internis; sectore radii 9 ramis; stigmate puncto fusco interno, atomo fusco ad rhegma et ad anastomosim rami obliqui cubiti; atomis minutis fuscis ad axillas furcularum marginalium; area postcubitali longa, basi biareolata.

Ala posterior impunctata; area radiali 3 venulis internis; sectore radii 10 ramis; area postcubitali longa, simplici.

Long. corp. ♂ 26 mm., al. ant. 22, post. 21, cerc. 2 mm.

Patria. Pt. Pleasant, N. J., July 25. Leg. Bueno. (Col. m.)

12. **Hesperoleon nivatensis.** sp. nov. (Fig. 2).

Similis *feroci* Walk. minor.

♂ caput facie testacea, fronte picea, nitida, superne pone antennas testacea, pilis griseis; vertice testaceo, linea transversa antica atra nitida et alia postica nigra, medio subinterrupta; oculis fuscis; palpis maxillaribus nigris, ad articulationes testaceis, labialibus paulo longioribus, testaceis, articulo ultimo fusiformi, inflato, piceo, apice acuminato, antennis fuscis, clava parum dilatata, inferne medio testacea, capiti ac thoraci longitudine subæquali.

Prothorax transversus, pilis brevibus, griseis, testaceus, linea longitudinali media in duas longitudinaliter divisa et alia laterali inter ipsam et marginem lateralem fuscis. Meso- et metanotum testacea, fusco longitudinaliter striata. Pectus fuscum, testaceo lineatum.

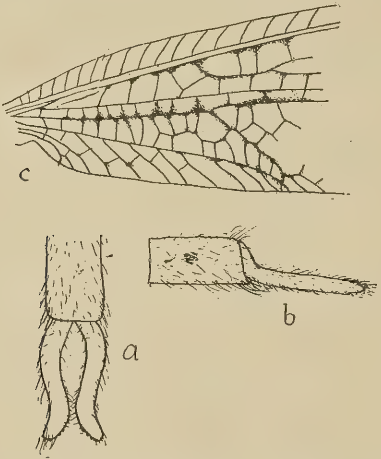

Fig. 2. *Hesperoleon nivatensis* ♂ Navas. *a.* End of abdomen, above. *b.* Same from side. *c.* Basal part of the forewing. (Col. m.)

Abdomen ala posteriore longius, fuscum, albido breviter pilosum, superne segmentis 3–5 linea laterali longitudinali testacea; cercis (Fig. 2, *a*, *b*) fortibus, ultimo segmento abdominis paulo longioribus, cylindricis, leviter arcuatis, in quarto apicali extrorsum arcuatis, in parte interna hujus portionis denticulatis, externe totis longiter fusco pilosis, externe fuscis, interne testaceis.

Pedes testacei, apice tibiarum et articulorum tarsorum fusco, femoribus anticis superne, intermediis superne et inferne (lateraliter testaceis) posticis subtotis fuscis; tibiis posticis inferne fuscis; calcaribus testaceis, anterioribus duos primos tarsorum articulos haud aequantibus, posterioribus primum superantibus.

Alæ hyalinæ, subobtusæ, margine externo vix sub apicem concavo; stigmate pallido, interne fusco limitato; reticulatione subtota fusca, pallido modice varia, latius ad procubitum; area apicali lata, serie venularum gradatarum dotata; linea plicata anteriore distincta.

Ala anterior (Fig. 2, *c*) aliquot venulis ad insertionem in radium et cubitum fusco limbatis; item stria ante apicali et axillis furcularum marginalium fuscis; area radiali 4 venulis internis, ultima cellula divisa; sectore radii 9 ramis; area cubitali interna medio biareolata, postcubitali basi biareolata, seu venulis gradatis instructa.

Ala posterior, area radiali 2 venulis internis; sectore radii 9–10 ramis; area postcubitali simplici.

Long. corp. ♂ 30 mm., al. ant. 27 mm.; al. post. 24 mm.

Patria. Yerington, Nev., VII. 5, Lyon Co., alt. 5,000 feet. P. P. Baumberger (Col. m.).

13. **Neleon** gen. nov.

Antennæ clava manifesta, insertione haud proximae, distantes plus latitudine primi articuli.

Prothorax transversus.

Abdomen cercis haud exertis.

Calcaria primo articulo tarsorum breviora aut vix longiora.

Alæ plerumque angustæ, acutæ cellulis plerisque rectangularibus; linea plicata pone sectorem radii haud distincta; area costali angusta, simplici, apicali lata, serie venularum gradatarum instructa; area radiali pluribus venulis internis.

Ala anterior area apicali duplici serie venularum gradatarum; ramo accessorio seu linea plicata pone cubitum illique parallelo indicata.

Cetera ut in *Myrmeleone* L. restr.

As type of this new genus I select the species *M. immaculatus*

De G., from the United States (not *M. occidentalis* Currie). Under the same genus I place *M. pictifrons* Gerst. from Australia, *M. crudelis* Walk. from North America, and others.

Family HEMEROBIIDÆ.

14. *Hemerobius humuli* L. White Plains, Mosholu, N. Y.; Westfield, N. J.
15. *Micromus posticus* Walk. White Plains, Staten Island, Forest Park, Brooklyn, N. Y.
16. *Psectra diptera* Burm. White Plains.

Family CHRYSOPIDÆ.

17. *Chrysopa nigricornis* Burm. Forest Park, Waban.
18. *Chrysopa harrisii* Fitch. Van Cortlandt Park.
19. *Chrysopa chi.* Fitch. Forest Park, Westfield, Mosholu, Waban.

Family PSOCIDÆ.

20. *Psocus striatus* Walk. Mosholu, Sept. 13, White Plains.
21. *Psocus variabilis* Aaron. White Plains, July 9, August 13, 1910.
22. *Polypsocus abruptus* Hagen. Mosholu, Oct. 18, 1902. I prefer the name *abruptus* to the *corruptus,* as usually printed.
23. *Peripsocus alboguttatus* Dalm. White Plains, Aug. 15, 1909. It is entirely like the examples from Europe. I have not seen the record of this species from the United States.
24. *Peripsocus subpupillatus* MacLachl. White Plains, July 4, 1909. Also, I think, the first record from the United States.

March 11, 1915.

THE SWEET SINGERS OF PALLAS ATHENE.

By R. P. Dow, Brooklyn, N. Y.

> "Even upon the spear of Athene, with her beautiful helmet, you may see me, Tettix, seated, for as much as we are beloved by the Muses so much do we love Pallas, the virgin, who first gave a prize for melody."

If the buzzing of the bee was music to the Greek of old, who loved beauty of sound no less than beauty of form, most glorious was the melody of the insect mentioned by almost every classic writer and known as the Tettix. Its song raised it to a place in the constellations, took it under the special protection of the Muses, seated it on the thrones of Pallas and Phœbus Apollo. Yet in almost every English translation this name is rendered as "grasshopper." The word is one of the many attempts at imitation in letters of a natural sound. A close English analogy is tattler, prattler. The Romans called the insect Cicada, with the same attempt at sound imitation, the *c* doubtless pronounced like the soft *ch* of chirp. The direct English congener of this is chatter. The Greek word describing its song is *lalageei.* Note the repeated syllable. When the amorous Horace sings of his Greek slave, his words are: "Oh, my heart, my Cicada chatterbox."

"The song of the Tettix," says the oldest Greek poet, "all orators should copy." Theocritus cries in rapture to his sweetheart: "Love, thou singest more sweetly than the Tettix." Latreille, the great French naturalist of a century ago, calls it *tibicen,* the flute player. Vergil declared that its sound annoyed his ears most horribly. A modern writer on natural history likens it to the noise of a stick drawn rapidly along a picket fence.

Homer speaks of the Dogfly leading Ares,—this of the Tettix in the stars. When Sirius is in ascendant, Tettix sings loudest and best. It is the same here and now. The shrill song of the cicada is best in the dog days. When it is heard in the morning we know a long hot day is ahead.

Among the few golden ornaments recovered from ancient times are a number of figures of the Cicada. These were called by the Greeks Chrysotettix. The Athenian ladies, who wore them as ornaments in their hair, observed the myth that before mankind arrived in Greece the Tettix was the original inhabitant, the autocthone. Hence the wearers of the Chrysotettix were members of the oldest families. In imperial Rome the custom was adopted for families whose genealogy went back to the glory of free citizenship under the republic. Woe to the upstart, the *nouveau riche,* who might wrongfully don one. Were the symbol used in America, it might well be claimed by somebody like the Descendants of the Mayflower.

In the Anthology it is declared that Phœbus loved the Tettix and gave it a shrill song. "Old age does not wear it down, the clever one, earth born, song loving, without suffering, having flesh without blood, nearly equal to the Gods." It will also be observed that the Tettix required no food except the dew. Even the natural historian of Greece asserts that it eats nothing else.

The earliest clear mention is in Hesiod, the farmer poet of perhaps 800 B. C.: "When the dusky songster, Tettix, perched upon a green bough, begins to sing of summer for man,—Tettix, whose meat and drink is the life-giving dew,—both all day long and in the morning pours his voice in the fiercest heat." Attributed to Anacreon, about 550 B. C., is this: "We deem you, Tettix, happy, because, having drunk, like a king, a little dew you *lalage* on the tops of trees, for whatever you see in the fields and whatever the seasons produce is yours, O little friend to the land tillers, you that harmest none." Meleager says: "Thou voiced Tettex, drunk with drops of dew, singest of the Muse, thou that livest in the country and prattles in the desert, and sitting with thy *serrated legs* on the tops of petals gives out melody from thy dusky skin." Theocritus, muse of the Sicilian shepherds, "the Tettix vexes the reapers." "The Tettix watches the shepherds from the tree tops." Still again: "the fire-colored Tettix on the shady branches toils at chirping." Poetic license. No Tettix is fire-colored and none seems to toil at singing.

Even the beloved of the Gods may not be free from sorrow. The Tettix protests, through the Anthology: "Why, shepherds, do you shamelessly drag me, Tettix, captured from dewy boughs, lover of solitude, roadside songster of the nymphs, chirping shrilly in the mid-day heat on the mountains?" Theocritus again: "the buzzing Sphex against the Tettix," having watched, no doubt, the wasps stinging the Cicada and dragging it to paralyzed life imprisonment until the young wasps might grow to maturity by inflicting the most cruel of deaths on its live food. Evenus, about 400 B. C., protests to the nightingale who has seized a Cicada, bearing it to its unfledged birdlings: "It is not right that a songster should perish in the mouth of one devoted to song." Another poet came to the rescue, then sang: "A spider, having woven its thin web with slim feet, caught a Tettix in the intricate net. Seeing, I did not run by, for I heard its lament from its fetters, and I freed it, saying: 'Go free, sweet singer.'" A little girl in Sicily, long before the days of Roman greatness, lost her pets. Anyte, the poetess, sang of it: "For a locust, the nightingale of the ploughed fields, and for a Tettix, who sleeps in the oak tree, did Myro make a common tomb, after the child had dropped a maiden tear, for Hades, hard to be persuaded, had gone away, taking her two playthings." A later writer commemorates the same sad event: "For a Locust and a Tettix Myro placed this monument, throwing on both a little dust with her hands, and weeping at the funeral pyre; for Hades carried off the male, and Proserpine the other." Boys will be boys, and Tettix sings a death song: "No longer shall I delight myself by singing from my quick moving wings; for I have fallen into the savage hands of a boy, who seized me cautionless, as I was sitting under the green leaves." The worst fate of all is thus recorded by Aristotle himself in his Natural History, 330 B. C.: "The female Tettix deposits her eggs in fields or in the reeds used to support the grapevines, piercing the bark. The young are washed into the earth and are common in rainy weather. The maggot underground becomes a Tettigometra, and they are tastiest before they emerge from the larval skin. The Tettigometra emerge by night, burst their envelope and become Tettix. When first hatched the males are sweetest to the taste but after sexual intercourse the females are best for they are full of white ova." Oh, favorite of the Gods, who serves to fill the Attic belly! Galen, Father of Medicine, prescribes a Tettix mixed with an equal amount of pepper as a cure for colic.

Solinus, the Roman, about 260 A. D., in his Polyhistor, notices that the Cicadas of Rhegium have no song, and Granius, his friend, tells him the reason. It seems that Hercules lived near Rhegium and that the Cicadas disturbed his sleep. Had this God of muscle been the Greek Herakles, they would have lulled him to sweet dreams, but he was the Roman God and the insects jarred his ears, as they did those of Vergil. So Hercules condemned to perpetual dumbness all the Cicadas which entered his bailiwick.

Turn back to the Iliad, not less than 1,000 B. C.: "Just as the scorched grasshopper flees from the burning field." This word, Acris, means sharp, angular, spindling. Once upon a time Aurora herself fell in love with with a handsome mortal, by name Tithonus. Then at her prayer did Zeus himself bestow upon him immortality. But the chief of the great Gods laughed in his sleeve. He purposely omitted the factor of immortal youth. Mayhaps in his wisdom he realized that love tires of immortality. Tithonus grew into the lean and slippered pantaloon whose skinny thighs afforded a too apt simile. Kindly Zeus transformed him into a grasshopper. Thus Acris is the metaphor for spindle shanks, its femur the scrawny thigh of the wizened old man.

Aristophanes has plenty to say about the ravages by the Acris of the cultivated fields. That they were voracious eaters of plant life was a familiar everyday fact. In return, however, the Greeks made use of them. Fried grasshoppers were a standard summertime dish, and they were pickled for the winter. John the Baptist, living five years in the wilderness, subsisted on Acris* and wild honey. The passage is almost wholly misunderstood. The anthrene, the wild bee, deposits only a morsel of honey. As for the grasshopper, did you ever try to catch them without a net? The idea is that John lived a life of such privation that the day was rare when he got a satisfactory dinner.

Socrates, quoted by Plato, on the last day of his life says of the Acris that no man has seen them eat. Before the Muses were born, they were men who delighted so much in their own singing that they forgot to eat and finally starved. The Muses turned them all into grasshoppers. Thereafter they ate nothing but the dew, serving the Muses, praising their song and bringing to them information of the sweet singers among mortal humanity. Apparently Socrates, than whom, the Delphic oracle declared, there was no wiser man, failed to comprehend the distinction between the voracious grasshoppers and the Tettix.

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* Of all the attempts to explain the New Testament none is more lamentable than that to interpret "locust" as the fruit of a leguminous tree known as St. John's Bread.

Our Theocritus, he himself of the sweet Tettix tongue, tells considerable about the Acris and the little wicker cages made to keep them as household pets. Maybe here poetic license is the death of scientific accuracy. Throughout the Mediterranean lands to-day the people make these cages for the crickets, which sing sweetly and bring good luck. They live in captivity many months. Did Theocritus balk at the word Attelabus, which fits illy into his pastoral meter, or did they keep Tettix, cricket and grasshopper alike in wicker cages, loving the song of all three? Meleager, in the Anthology, says clearly enough: "Oh, cricket, soother of slumber, who dispels my regrets, muse of the ploughed fields, beating your vocal wings with your feet, I shall feed you everblooming leeks and cut up drops of dew." Here is an exact picture of the cricket in its wicker cage.

The etymology of this word, *attelabus,* is uncertain. To connect it with the Greek exclamation "atetai," thus making the word mean singer of sorrow, is good poetry, for the cricket song is never gay and careless, but telling rather of the long night watches, tinged with sadness, perhaps. Herodotus is the first to use the word. It has an oriental look, and it might be one of several that Herodotus brought home from Egypt. On the other hand the termination of Sanscrit words meaning animals is very frequently *bha.* Compare *Carabha,* Greek *Karabus,* English, or rather scientific Latin, *Carabus.* Compare also the Zend word for wasps "Derbices," root something like Darbha. If it were a Sanscrit word, one must look for its original in something like "attelabha," but no such word has ever appeared in Sanscrit literature.

Acridion, or as Latinized, Acridium, is, of course, a little grasshopper, and the word is one of the many translated by Linné into modern scientific language. The most that can be said about it is the plaint of Theocritus: "Oh, Acridion, do not, I pray you, leap over my fence and spoil my young vines."

PROCEEDINGS OF THE BROOKLYN ENTOMOLOGICAL SOCIETY.

(To date from this issue of the BULLETIN, only the scientific portion of the Minutes of the Meetings of the Society will be published. Members wishing to be advised of the affairs of the Society, may, if they so desire, address the Secretary, who will furnish them with the facts; or better, may learn them at first hand by being present at the regular meetings.)

Meeting of January 14, 1915: This being the annual meeting, the following were chosen officers of the Society for the year 1915: President, Wm. T. Davis; vice-president, W. T. Bather; treasurer, Chris. E. Olsen; recording secretary, J. R. de la Torre Bueno; corresponding secretary, R. P. Dow; librarian, A. C. Weeks; curator, George Franck; publication committee, Messrs. Schaeffer, Dow and Bueno.

The following appointments were made: Delegate to the Scientific Alliance, Mr. Chas. E. Sleight; Auditing Committee, Messrs. Bather and Erhardt; Field Committee, Messrs. Pasch and Schott.

The presidential address was on *Dendrotettix quercus,* now recorded from Yaphank, L. I.

Long Island records: Mr. Nicolay recorded the following coleoptera: *Pityobius anguinus, Elaphrus clairvillei,* and *Buprestis lineata,* all from Yaphank and Bellport; *Buprestis lineata,* from Bellport; *Elaphrus fuliginosus,* Brooklyn; *Horistonotus curiatus,* Wading River.

Miscellaneous records in coleoptera: By Mr. Nicolay, *Elaphrus cicatricosus,* Monmouth, Me.; *E. clairvillei,* Wales, Me.; *Sandalus niger,* Palisades, N. J.

Lepidoptera: *Alsophila pometaria* was reported taken in winter with a temperature ranging between 20 and 24 degrees.

In Heteroptera: *Acantholoma denticulata* Stål, was reported from West Point, N. Y., April, taken by Col. Wirt Robinson.

The regular programme was a joint paper by Messrs. Dow and Bather on *Ateuchus sacer* L., and all the curious beliefs that the ancients held regarding it, and an account of collecting it in Italy.

Meeting of February 11: Long Island records—Mr. Shoemaker showed a specimen of *Arctia anna,* black on wings, picked up on the tide line wash up at Rockaway Beach, and also *Arctia excelsa.*

Mr. Davis corrected the minutes for October 15 as published and stated he had not collected *Dichromorpha brunnea* Scudder on Long Island. This insect, recorded from Texas, has not been taken locally, so far as we know.

Mr. Bather exhibited the following insects, all from Porto Rico:

Lepidoptera: *Deilephila lineata, Triptogon lugubris, Therctra tersa, Pholus vitis, Phlegethontius rusticus, Ph. carolina,* and the rare *Diludia cubensis* G. & R., all of which come into our fauna, and also the typically tropical *Perigonia restituta; Perigea iole, Melanochroia cephise, Dyaphnia* *hyalinata, Agraulis vanillæ, Euptoicta hegesia, Pieris ilaire, Catopsila eubule, Terias lisa, T. alba, Papilio polydamas,* all occurring in our fauna, others being *Lycæna cramus, Ecpantheria cacia* and *Lawron vinosa.*

Coleoptera: *Hydrophilus insularis* and *H. ater.*

Orthoptera: *Scapteriscus didactylus.*

Heteroptera: *Spartocera cinnamomea, Zelus bilobus, Edessa cordata* and *Nezara viridula.* All were taken in April, 1914.

Meeting of March 11: Long Island records—Lepidoptera: *Pelea vernalis,* Halfway Hollow Hills, by Mr. Engelhardt; *Euptoieta claudia,* stated by Mr. Franck to be quite common on Long Island and by Mr. Engelhardt that it fed on pansies and emerged late in the fall. Scientific papers: Mr. W. T. Davis on the "Periodical Cicada in Long Island," and "The Fungus-Growing Ant near Smithtown," both of which will be printed in the BULLETIN.

Specimens of *Limnodytes gerriphagus,* a minute Proctotrypid parasitic on *Gerris* eggs, together with parasitized ova, collected in Ithaca by Mr. E. A. Richmond, were shown by Mr. Bueno.

J. R. DE LA TORRE BUENO, *Recording Secretary.*

EDITORIAL.

Most of the subscribers to the BULLETIN recall the paper by Mr. Dury, Vol. IX, Dec., 1914, p. 101, enumerating the beetles taken by him under a grass pile. A bushel or two of lawn mowings were dumped in a corner of a yard and a watermelon rind dropped on the pile. It is still a fine collecting ground. It has yielded many species hitherto unrecorded in the state.

The BULLETIN has subscribers in every state of the Union and every province of Canada. It is now suggested that at least one reader in each make exactly the same sort of grass pile, bait it with melon rind or some decaying fruit, moisten it occasionally during the dry season, and swell his entomological collections. The harvest will be rich in every order from Thysanura to Diptera. The coleopterists will probably fare best of all. The catch in any state should reach at least 125 species and may easily mount to 200. It will include not only every fungus eater, every feeder on decay, every beetle of prey, but will attract in the dry season many others which are compelled to seek moisture at any cost. Each investigator will surely take ten or more species unrecorded from his state and a score or more new to his own collection, even though he has been a life-long student. But for definitive results this pile should in each case be watched for a full calendar year. Watchfulness should be relaxed only when the ground is actually frozen hard.

The study of distribution is now becoming of paramount importance in these days of state and local lists. What would be the benefit to science, if fifty observers adopted this search and submitted their records to some leading coleopterist for a symposium? There are plenty of masters who will undertake the identification of doubtful species. A complete list would tell more about distribution than any other project ever undertaken.

About twenty such grass piles have already been started. If interested or desiring additional information, please write to the editor of the Bulletin.

A NEW SPECIES OF RHEUMATOBATES BERGR. (HEM., GERRIDÆ).

By E. Bergroth.

In my revision of this remarkable genus* four species were described, two of which were known from the Atlantic coast region of the U. S. (New York State to District of Columbia), one from the island of Grenada (Lesser Antilles), and one (a new species) from the Caribbean coast of Guatemala. Thus no species had been found far from the sea, but since that time Mr. W. J. Gerhard, of Chicago, has sent me specimens of *Rh. Rileyi* Bergr. taken by him in Palos Park, Illinois. I think the want of further records of the genus from the interior parts of the United States is merely due to the fact that very few American entomologists (like those of Europe, alas!) taken an interest in the insects of this order. My friend de la Torre Bueno has submitted to my examination numerous specimens of a *Rheumatobates* which proves to be undescribed, and as the descriptions in my revision are detailed, and specimens of the two other North American species are in the hands of all the few American hemipterists, it will be sufficient to state little more than the points in which the new species differs from the others.

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* Ohio Naturalist, VIII, pp. 376–382 (1908).

Rheumatobates trulliger n. sp. Color as in *Rh. tenuipes* Mein., the pale lozenge-shaped spot to the mesonotum of the apterous form being narrower than the pale spot of the pronotum, and the yellow mesosternum being marked with two longitudinal black bands. Mesonotum of the apterous form in both sexes somewhat broader than long.

Male: The spongy fossa of the third antennal joint occupying somewhat less than the apical half of the joint, being distinctly longer than in *Rh. Rileyi,* but shorter than in *Rh. tenuipes;* fourth antennal joint somewhat shorter than third, being conspicuously longer than in *Rh. Rileyi,* but a little shorter than in *Rh. tenuipes,* its spine placed in the basal half, but nearer to the middle than to the base. Legs much as in *Rh. Rileyi,* but with the following differences.

Rh. trulliger:	*Rh. Rileyi:*
Middle femora perfectly straight, hairless from the base to near the apex, where there are a few hairs on the inner margin.	Middle femora a little curved, fringed with long hairs along the whole inner margin, the longest hairs being in the middle.
Middle tibiæ fringed with long straight hairs on the inner side from the base to beyond the middle, then with short straight hairs.	Middle tibiæ fringed with short hooked hairs on the inner side from the base to near the middle, slightly more than the apical half hairless.
The curved hind femora scarcely or slightly thicker in the middle than at base and apex, with very short and tiny hairs along the whole inner margin.	The curved hind femora conspicuously incrassated in the middle, the inner margin of their basal third densely fringed with rather long hairs.
Hind tibiæ on the outer side between the middle and the apex with a distinct spine and the apex filled with a very thick tuft of rather long hairs.	Hind tibiæ on the outer side between the middle and the apex with a minute (sometimes indistinct) tubercle, the space between the tubercle and the apex with very short hairs, not forming a tuft.

Female: At once distinguished from the female of *Rh. Rileyi* by the black-banded mesosternum, but extremely similar to that sex of *Rh. tenuipes,* from which it differs solely by having the mesonotum a little broader in proportion to its length.

Bainbridge, Georgia (J. C. Bradley).

In the color and venation of the hemelytra the winged form of *Rh. trulliger* does not differ from the two other North American species.

The species occurred at Bainbridge in society with *Rh. tenuipes,* but no specimens of *Rh. Rileyi* were found at that locality.

For the following reasons I think it almost certain that *Rh. trulliger* also occurs near Washington, D. C. Since several years the title-page of the Proc. Ent. Soc. Washington is ornamented with a figure of a macropterous *Rheumatobates* supposed to represent *Rh. Rileyi.* It seems to me that the drawer of this figure has had specimens of both *Rh. Rileyi* and *trulliger* before him. The whole middle legs and the hind femora in that figure are taken from *Rileyi,* but the hind tibiæ from a specimen of *trulliger.* I dare say that no specimen of *Rileyi* with hind tibiæ like those of said figure can be found in any collection.

TWO NEW NORTH AMERICAN DIPTERA.

By J. R. Malloch, Urbana, Ill.

The types of the two species described herewith are deposited in the Illinois State Laboratory of Natural History, Urbana, Ill.

Borborus scriptus, n. sp. Male: Deep black. Head shining, the frons with a velvety black M-shaped mark on the central stripe, on either side of the triangle and the stripes which bear the serial cruciate setulæ; upper half of cheeks glossy, the lower half with whitish pruinescence. Mesonotum shining, the disc with slight brownish pruinescence; scutellum concolorous with disc; pleuræ highly glossy except on upper and posterior margins. Abdomen subopaque, the surface with slight brownish pruinescence. Legs black, the bases of fore tibiæ and their tarsi yellowish. Wings milky white, costal vein yellow, the other veins vitreous. Squamæ white. Halteres yellowish white. Hairs and bristles black.

Frons distinctly more than half the width of head; orbits broad, anterior orbital bristle slightly weaker than the upper, both outwardly directed, orbital hairs weak; cruciate setulæ weak but rather numerous; antennæ of moderate size, arista slender, not longer than width of frons; cheek over half as high as eye, the latter slightly longer than high. Mesonotum with four very weak pairs of dorso-centrals which are hardly distinguishable from the setulæ which are in the same longitudinal lines; between the dorso-central rows there are two rows of acrostichals, which are as strong as the setulæ of the two dorso-central rows; between the dorso-central rows and the lateral row there is a somewhat irregular row of setulæ; scutellum short and broad, rounded posteriorly, 4 marginal bristles present; sternopleural bristles very weak. Abdomen very short and broad, second segment much elongated, the others short; dorsum of second segment almost glabrous, the other segments with short surface hairs and distinct setulose hairs apically on lateral margins; hypopygium large, and projecting on ventral surface. Legs stout and rather long, their surfaces with numerous, moderately long, soft hairs; mid and hind tibiæ with preapical bristle, the latter with a distinguishable bristle near middle of the anterior surface; hind tibia with a short but distinct apical thorn; basal joint of hind tarsus much swollen, subequal in length with the slightly swollen second joint; empodia large, fringed. Wings broad; second costal division two and a half times as long as first; veins 3 and 4 slightly convergent apically, the last two sections of fourth vein subequal in length; inner cross-vein slightly over one third from base of discal cell; outer cross-vein over one half of its own length from end of fifth vein; sixth vein incomplete.

Length 2, mm.

Type locality, St. Joseph, Ill., May 17, 1914 (J. R. Malloch).

This species is closely allied to *B. lacteipennis* Malloch, but may be separated from it by the color of the frons, the absence of the series of long hairs from the hind tibiæ of the male, and the different venation.

Aphiochæta bisetulata, n. sp. Female: Yellow. Ocellar region blackened, antennæ and palpi pale yellow; arista brown.

Thorax reddish yellow on disc; pleuræ pale yellow; a black spot below wing-base and another on posterior surface of mid coxa. First abdominal segment entirely yellow, the others with a dull black spot on each side at anterior angles, and indications of a central row of paler spots. Legs yellow, apices of hind femora blackened. Wings slightly grayish, veins blackish brown. All hairs and bristles black. Halteres yellow.

Frons slightly broader than long, central furrow poorly defined; one pair of strong post-antennals; central pair of bristles in first row distinctly below the level of outer pair and much closer to the latter than to the post-antennals, though not in vertical line with the outer pair; second row almost straight; surface of frons with numerous short hairs; antennæ moderate in size, third joint rounded; arista very slender, bare, about one and a half times as long as width of frons; palpi larger than antennæ, strongly bristled; cheek with one long downwardly directed bristle and a series of about eight weaker bristles which increase in length from posterior to anterior end of series. Mesopleura bare; scutellum with four bristles. Abdomen broad at base, tapering to apex; segments subequal, without conspicuous bristles. Fore tarsus slender; hind femora dilated; hind tibiæ with the setulæ regularly arranged, thirteen in the series, only the apical one stronger than the others. Wings with costa to middle; first division one and a third times as long as $2 + 3$; second division twice as long as third; angle at fork of third vein acute, its base about midway from apex of second vein to apex of first; fourth vein gently arcuate at base, leaving distinctly beyond fork of third, fringe of moderate length, rather close.

Length, 2.5 mm.

Type locality, Urbana, Ill., June 14, 1914 (E. H. Swigert).

Allied to *A. fisheri* Malloch and *inæqualis* Malloch, from both of which the presence of only one pair of post-antennals separates it readily.

OFFERTA ET DESIDERATA

WANTED.—Pupæ of *Papilio ajax* and *rutulus*. Ward's Natural Science Establishment, 84 College Ave., Rochester, N. Y.

All kinds of Chrysalids, Cocoons, and Pupæ wanted in exchange for North American lepidoptera. Address: Herman H. Brehme, 74 Thirteenth Ave., Newark, N. J.

Florida Insects of all orders, also Fish, Batrachians, Reptiles, Shells, and Marine Invertebrates sold by A. G. Reynolds, Gulfport, Fla.

WANTED.—No. Am. Cerambycidæ and Buprestidæ, especially *Agrilus;* will collect insects of any order in this locality for exchanges in above families. C. A. Frost, 26 Pond St., Framingham, Mass.

The undersigned will greatly appreciate receiving records of New Jersey species not listed in Smith's Insects of New Jersey.—Harry B. Weiss, 242 Raritan Ave., New Brunswick, N. J.

The collection of the late G. W. Kirkaldy has come into my hands. From his letters to me it would appear that there is loaned material contained therein. If the lenders will communicate with me, I shall return such of this loaned material as may still be in existence. J. R. de la Torre-Bueno, 14 Dusenbury Place, White Plains, N. Y.

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BULLETIN
OF THE
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VOL. X OCTOBER, 1915 NO. 4

THE FIRST INSECTS IN THE WORLD.

By R. P. Dow, Brooklyn, N. Y.

During the first æons of human progress mankind was too busy with the struggle for existence to study the insects. Men did not find time to consider one differentiable from any other animal, except in size. It remained for Aristotle, the greatest of the Greek philosophers, about 330 B. C., to observe a distinction and name the class. His word *entomos* means an animal with two insectations, dividing the whole into head, chest and abdomen. This definition fails to exclude worms, arachnida, scorpions, sea creatures, etc. But, it must be remembered that Latreille and other great modern masters confounded insects and crustaceans. The Latin word *insectum* is a direct translation of the Aristotelian term without other significance.

Nevertheless the harm or aid to humanity given by the insect world must have been recognized in a primitive period. Less than 150 years ago there was restored to the European scholarship the mass of literature of the Zend and Sanscrit languages, both antedating all others known. The Zend Avesta, the Revelation of Ahura-Mazda, creator of light and goodness to Zoroaster, the purest minded man of that region in that time has a date. Aristotle states that Zoroaster lived 6,000 years before Plato. It is safe to accept this date without much reserve, for Plato, above all Greek philosophers, treasured ancient lore, recalling even the lost continent of Atlantis, the days when Egypt, old in scholarship, taught infant Greece, when Zeus was a human youth on Olympus.

The first Fargard of the Avesta, the narrative of Zoroaster himself, describes the revelation of Ormazd, the classic Persian maybe several thousand years earlier, claimed that they were the form of the name of Ahura-Mazda. When he created an element of good, the Daeva (or devil), Ahrimainyus (or Ahriman, of classic Persian) created its counterpart in evil. For the blameless land came that of sin and evil, and then in turn for each creation of good, Ahriman countered with death, a serpent, the winter and *a wasp whose sting is very death to the cattle and the fields.** All the insects created later were by Ahriman, and include the flies, which by contact with the dead pollute every living thing, scattering *filth by the anus;* the locust, the accused; the winged gnats of evil; the louse, the unclean and afflicter of mankind; the scorpion; the ants, of two species, those which steal the barley grains, and those (especially attending the winged Daevas) burrowing vast holes in the earth.

The narrative of Zoroaster mentions no place but can only be located in what is now Persia. It deals with stirring times, when the races of Iran were engaged in titanic conflict with the races of Tura, a division of original stocks of humanity which has remained primary for the subsequent 8,000 years. It came when cvilization was far from young, when iron was in ordinary use as weapons, when armor of gold and silver was used, when property rights were respected, when many rich men were spoken of in the general terms as owning 1,000 domesticated Bactrian camels, 1,000 horses, 1,000 cattle and 10,000 sheep. A wild fauna had names, and probably a hundred animals are specifically mentioned. Of them all the wasp is the first.

This fabled origin explains the superstition held throughout ancient Egypt that the sting of the wasp was fatal to cattle. It also throws light on the belief prevalent in Greece, and mentioned by Herodotus, that human life became unsupportable to the northward of the Black Sea on account of the vast number of wasps.

---

* The translation is that of 1854, under the auspices of the East India Co. The translation by James Darmstatter reads: "Thereupon Angra Mainya countercreated the locust which brings death unto cattle and plants." The translation by Sir Henry Rawlinson is more vague—"an insect." The interpretation of the word in question is a matter for the consideration of the various Avesta societies. If locust were the correct translation, a totally different word would not have been employed in the same brief Fargard for what appears later as locust.

In a later fargard of the Avesta it explained that when the Daevas of Ahriman flew away for refuge to the cold lands they took their wasps with them. They retired to the territory extending west indefinitely from the Caspian. In classic Persian there are many enumerations of tribes of Iran and Turan, most of which take the name of some animal. Flattering names like Lion, Tiger, Swift Horses, etc., generally belong to some tribe of Iran. Those of Turan include the Hyrcani, wolves; Make or Myki, either flies or ants; and the Derbices, literally "wasp." The races of Turan controlled the northern world. The nomadic race of the wasps of Turan* forbade Greek invasion north of the Black Sea.

The evidence of philology supports in another way the Avestic view of the primitive existence of the wasp. The Avesta does not mention the honey bee, although that creature was common to the people of Sanscrit at the beginning of their literature. Sphex, vespa, wespe, guêpe, wasp, are the same word known long before Greeks, Romans, Germans, French and Angles parted to become separate races. There is no common word for honey bee. It is variously *melitta, apis, abeille, bee,* representing new ideas in each land where it was named. Even the word for honey coincides only in Greek, *meli,* and Latin, *mel.* Honey was known, however, and inferentially the bee, before the Babel of tongues and separation of races. Its first known use was to be mixed with water, fermented and used as a drink. The Rig-Vedas are conceded to be the oldest form of Sanscrit language. This work mentions the honey-colored (or suffused) cloud, dropping its pellucid rain. A little later it speaks directly: "the honey-seeking bee praises thee, Indra (God of the favoring rain)." The word for honey is *madhu.* The word soon reappears in a metaphorical sense. The God of purification, Agni, from which is thought to come the Latin *ignis* (fire, since purification comes largely through fire) conquers and slays Madhu, the personification of earthly desire, earthly pleasure. Notice that the symbol of earthly pleasure is not sweet taste, but rather alcoholic.

---

* If the tribe of Derbices, meaning wasps, were to be considered by itself, such an interpretation would be impossible. The Derbices held their ground and were mentioned by Pliny as a distinct tribe near the Jaxartes River. Nevertheless, there is no impossibility or even improbability that the Greek idea of the wasps north of the Black Sea was based on the same or allied tribe of Turanians.

In Greek, from Homer downward there appears a word *methu*, which the Lexicons agree in translating as "wine." If this were correct it would be superfluous, as *oinos* = *vinum* = wine, fermented grape juice, was known to Noah and every one who came after him. The *methu* is always associated with an adjective, either *hadus,* ancestor of the English sweet or *glykeron,* which we retain as glycerine or glucose, both meaning sweet. *Methu* is a sweet drink, and it gave an intoxication of greater intensity, which the Greeks called methe.* In all the mediæval tongues of north Europe there is a word *mead,* meaning honey and water fermented, which became almost twice as alcoholic as grape juice. Take the common English adjective mad. Ten centuries ago it was spelled gemad, *i. e.,* an obsolete preterit, having become in a state of meadness, or having reached the quarrelsome stage of drunkenness. To get drunk on fermented honey is a practice known since early Sanscrit. The knowledge of honey drink indicates a knowledge of the honey bee.

This practice antedates Iran. That it was unknown to the Irans of Persia puts one on the horns of a simple dilemma. Either the civilization of Zoroastrian times was earlier that the Sanscrit, or Iran civilization in India had progressed much farther at the same period. The honey bee is the safest criterion of all in estimating the age of peoples and languages.

The Lama of the Kalmuck Tartars (date most uncertain) states that mankind lived in a sort of Eden sinlessly for 80,000 years. They then discovered a plant the juice of which was "sweeter than honey." This brought into the world sin, sorrow and suffering, which seem to be the inevitable concomitant of tasting the sweets forbidden by the Gods. Assuredly the apple proferred by the serpent to Eve was a *sweet* apple. The most ancient Veda is one series of prayer to the two great Gods to accept the offered libations of *Soma* juice. This was expressed from the stem of a herb and when drunk produced great exhilaration of mind. In other words the garden of Eden among all peoples was lost by indulgence in alcoholic drink. Modern scholars have attempted to identify the soma with the juice of a milkweed, *Asclepias acida*. There are ten thousand lines of verse devoted to the single remark that the devotee hopes the God will distend his stomach to contain more of the excitant drink. One wonders why it is no longer made.

---

* Note the word amethyst used to describe one of the semiprecious stones. It is the alpha privative and *methe*. To promote its sale the lapidaries "pushed" the idea that if one used for his honey drink (which the Romans loved under many names, but most often as Hydromel, water honey) a cup cut from amethyst, he could be free from the bestial stage of drunkenness.

If the Tartar phrase, "sweeter than honey" is not a later interpolation or mistranslation, it would indicate that the honey bee was known to Turan before, at least, Persian Iran. The insect, not mentioned in the Avesta, was a domesticated animal in China from the earliest known time. The Scythians, a Turanic race who were at the mouth of the Danube as early as 1500 B. C., oldest people in the world. Their diet, says Herodotus, was milk and honey. There had arisen a doubt in Egypt whether the Egyptians were, as they had believed, the oldest people. The Egyptians argued that life teems at the equator, secondly their rich soil could support humanity, while the barren hillsides could not. To this the upland Phrygians, Scythian race, replied that if the land rose out of the sea, they on the mountains were certainly older than the Nile dwellers on alluvial mud only a few feet above sea level. Then, again, if the earth was once a molten mass and had cooled for ages to the point of supporting life, the cold lands of Scythia must be far older and prior in development of organic life. The Phrygians seem to have had the better of the argument. Psammaticus, Pharaoh of Egypt, capitulated and acknowledged Turan as the older land. The honey bee was domesticated in Turan and a drink sweeter than honey started Turan on a world migration.

THE GALL MIDGES OF THE PINE.

By E. P. Felt, Albany, N. Y.

The gall midge fauna of the pine has received comparatively little attention, though it deserves careful study, since several species are of economic importance. The object of this brief sketch is to summarize what is known concerning these forms and especially to call attention to the more promising lines of study.

The best known of the pine midges is *Cecidomyia resinicola* O. S., now placed in the genus *Retinodiplosis,* together with at least three other species, namely, *R. resinicoloides* Wlms., *R. inopis* O. S., and an undescribed species, *R. palustris.* These four species have very similar habits, the larvæ of three at least moving about freely in resin which has recently exuded from wounds and probably rasping the living tissues and thus promoting, if not causing copious exudations. Small, unthrifty hard pines, *Pinus rigida,* on the sand plains near Albany frequently bear a number of resin masses inhabited by the larvæ of *R. resinicola* O. S., while others showing perceptible, though easily overlooked enlargements of the twigs and smaller branches, may be badly infested and seriously stunted by the larvæ of *R. inopis* O. S., a species which is primarily subcortical in habit and one which further study may show is more injurious than the better known *R. resinicola.* The larvæ of the western *R. resinicoloides* Wlms. inhabits pitch masses on the Monterey pine, *Pinus radiata,* the colonies being most frequently associated with wounds and, in the estimation of the describer, not the primary cause of the exudation. The larvæ of the southern *R. palustris* occur in resin masses on the long-leaved pine, *Pinus palustris.* We have no data as to the importance of this species. All of the larvæ referable to this genus have the posterior extremity bilobed, the tips of the lobes being fuscous, heavily chitinized, and strongly spined, an adaptation which permits the larva to extend its anal spiracles, located in these lobes, through the surface of the viscous resin it inhabits.

The rock pine, *Pinus scopulorum,* is subject to attack by a midge which produces greatly enlarged buds and the consequent destruction of the terminal growth. Two midges have been reared from these deformities, namely, *Contarinia coloradensis* Felt and *Dicrodiplosis gillettei* Felt, the former probably being the true producer of the gall. Parasitic infestation is so common that although we have attempted to rear a series of adults from several excellent collections of galls, we are still uncertain as to the identity of the true producer.

Pine needles are frequently aborted and, in some cases at least, a subglobose swelling is formed at the base of the needle cluster. Two species are credited with this work in the eastern states, namely, *Cecidomyia brachypteroides* O. S. and *Cecidomyia pinirigidæ* Pack., though as yet the identity of the true producer has not been ascertained. These two names stand on an uncertain basis, at least so far as the habits of the species are concerned. Two species have been reared from such deformities in this country, the best known being the western *Cecidomyia,* now *Thecodiplosis piniradiatæ* Snow and Mills. This gall midge produces a shortening of the needles and basal swelling on the Monterey pine, *Pinus radiata,* though it has also been recorded from several other pines and is occasionally so abundant as to seriously stunt infested trees. Another midge, *Janetiella coloradensis* Felt, was reared by Prof. E. Bethel from oval basal swellings of the needles of *Pinus edulis.* There are no data at hand as to the economic standing of this species. The important point in this connection is that the eastern species producing globose basal swellings of the needles have not been reared, though under certain conditions one at least is known to be abundant and somewhat injurious.

The dead and dying wood of pine affords sustenance to several gall midges, none of which can be considered as of much economic importance. *Monardia lignivora* Felt was reared from fungus-affected heartwood of *Pinus rigida* collected in North Carolina, while *M. pinicorticis* Felt was obtained from Scolytid galleries in pine. The same is also true of *Cecidomyia hopkinsi* Felt. *Winnertzia pinicorticis* Felt has been reared from the bark, presumably dying, of *Pinus inops.*

There is no record of gall midges inhabiting pine seeds or cones, though it would not be surprising if such were discovered in the near future, since *Dasyneura canadensis* Felt has been reared from the seeds of spruce.

TWO NEW SPECIES OF LIOTHRIPS (THYSANOPTERA).

By J. Douglas Hood, U. S. Biological Survey.

Both species described below are from eastern United States, and are made known in a preliminary way at this time in order that the name of one of them—an exclusive feeder on chestnut—may be used in connection with the study of the chestnut blight disease. Part of the material from which this species is described was kindly transmitted for determination by Dr. A. D. Hopkins, forest entomologist of the U. S. Bureau of Entomology.

Liothrips castaneæ sp. nov. (The Chestnut Leaf Thrips.)

Female (*macropterous*).—Length about 1.7 mm. Color dark blackish brown or black; antennal segments 3 and 4 and base of 5, yellow; fore wings with brown median streak in basal half.

Head about 1.2 times as long as wide, broadest slightly behind eyes, cheeks gently arched, slightly convergent posteriorly; vertex roundly produced in front of eyes, the anterior ocellus overhanging the insertion of antennæ; dorsal and lateral surfaces deeply and closely roughened with transverse lines and set with several short spines; postocular bristles nearly as long as eyes, blunt but not expanded at apex. Eyes nearly one third as long as head, not protruding. Posterior ocelli exactly opposite the posterior margin of anterior fourth of eyes. Antennæ 1.9 times as long as head, of the general form and structure common to the species of the genus; sense cones small, formula: 3, 0–1; 4, 1–2; 5, $1\text{–}1^{+1}$; 6, $1\text{–}1^{+1}$; 7 with 1 on dorsum near apex; color of antennæ: segments 1 and 2 nearly concolorous with head, 2 yellowish apically; 3 and 4 nearly clear lemon yellow, 4 sometimes very slightly infuscate apically; 5 with at least the pedicel lemon yellow, becoming blackish brown at apex; 6–8 blackish brown, concolorous with 1 and 2. Mouth cone subacute, attaining or slightly surpassing base of posternum.

Prothorax about 0.51 as long as head and (inclusive of coxæ) nearly 2.6 times as wide as median dorsal length; all bristles present, blunt but not expanded at apex, the midlateral pair usually subequal in length to the postoculars, the two pairs on the anterior margin subequal but slightly shorter, the two pairs near the posterior angles longer and stouter; coxal bristle about equal to anterior marginals. Pterothorax much wider than prothorax, sides slightly arcuate. Wings long, closely fringed, of nearly the same width throughout; fore pair with a brown median streak in basal half and with about 14 accessory hairs; hind wings nearly clear. Fore tarsi unarmed.

Abdomen of normal form, rather large and heavy, and wider than pterothorax. Tube three fourths as long as head and about 2.3 times as long as basal width, which is slightly more than twice the apical. Lateral abdominal bristles scarcely pointed and blackish brown in color; terminal bristles pointed, grayish, usually subequal in length to tube.

Measurements of holotype: Length 1.74 mm.; head, length 0.257 mm., width 0.214 mm.; prothorax, length 0.133 mm., width (inclusive of coxæ) 0.346 mm.; pterothorax, width 0.420 mm.; abdomen, width 0.516 mm.; tube, length 0.193 mm., width at base 0.085 mm., at apex 0.039 mm.

Antennal segments	1	2	3	4	5	6	7	8
Length (μ)	51	60	80	73	67	64	59	34
Width (μ)	38	33	33	37	36	33	27	15

Total length of antenna, 0.488 mm.

Male (*macropterous*).—Length about 1.6 mm. Slightly smaller and more slender than female. Upper lateral pair of bristles at apex of segment 9 of abdomen much shorter than basal width of tube, the lower lateral and dorsal pairs of normal length.

Measurements of allotype: Length 1.608 mm.; head, length 0.246 mm., width 0.192 mm.; prothorax, length 0.116 mm., width (inclusive of coxæ) 0.298 mm.; pterothorax, width 0.348 mm.; abdomen, width 0.384 mm.; tube, length 0.190 mm., width at base 0.078 mm., at apex 0.032 mm.

Antennal segments	1	2	3	4	5	6	7	8
Length (μ)	44	54	75	72	69	66	57	32
Width (μ)	33	30	29	33	30	27	24	13

Total length of antenna, 0.469 mm.

Described from 19 females and 2 males, all taken on chestnut leaves, as follows:

Virginia: Bluemont (type locality), July 1, 1914 (5 females), and August 31, 1913 (3 females) [J. D. Hood]; Great Falls, May 19, 1915 (3 females, 1 male) [W. L. McAtee].

Maryland: Odenton, July 12, 1914 (6 females, 1 male) [J. D. Hood].

Connecticut: East Hampton, May 31, 1915 (2 females) ["9911d, Hopk. U. S."].

Closely allied to *umbripennis* and *ocellatus,* but easily separated from both by the color of the fore wings. *Umbripennis,* furthermore, has a much shorter tube, while *ocellatus* has the lateral abdominal bristles yellow and the prothorax distinctly more than half as long as the head.

This insect has been known to the writer for two or three years, and has been observed in many parts of Maryland and Virginia, always on chestnut, where it can be looked for with invariable success on the under surface of the leaves. It is probably distinct from the sixteen or so species of *Liothrips* known to occur north of Panama; but it must be said that our present characters for the separation of species in this group leave much to be desired, though each form appears to be restricted more or less completely to a certain plant.

Liothrips leucogonis sp. nov.

Female (*macropterous*).—Length about 1.6 mm. Color dark blackish brown or black; antennal segments 1–3 yellow, shaded slightly with gray and brown; inner surface of all femora white at apex; fore wings with an almost obsolete brown streak in basal third.

Head very slightly longer than wide, broadest at middle, cheeks gently arched, slightly convergent posteriorly; vertex slightly and roundly produced in front of eyes, the anterior ocellus overhanging the insertion of antennæ; dorsal and lateral surfaces closely roughened with transverse lines and set with several short spines; postocular bristles four-fifths as long as eyes, blunt but not expanded at apex. Eyes slightly more than one third as long as head, not protruding. Posterior ocelli slightly behind anterior fourth of eyes. Antennæ about 2.1 times as long as head, of the general form and structure common to the species of the genus; sense cones small, formula: 3, 0–1; 4, 1–2^{+1}; 5, 1–1^{+1}; 6, 1–1^{+1}; 7 with 1 on dorsum near apex; color of antennæ: segments 1–3 yellow, shaded slightly with gray or brown along inner surface; 4–8 blackish brown, 7 and 8 uniformly so, the others more or less marbled with yellowish and darkest along their inner surface. Mouth cone rounded, about attaining base of prosternum.

Prothorax about 0.62 as long as head and (inclusive of coxæ) about 2.5 times as wide as median dorsal length; all bristles present, blunt but not expanded at apex, the two pairs on the anterior margin subequal and half as long as the postoculars, and slightly shorter than the coxal and midlateral pairs; posterior marginal pair about equal to postoculars, and decidedly shorter and somewhat more slender than the conspicuous posterior angulars. Pterothorax much wider than prothorax, sides slightly arcuate, convergent posteriorly. Wings long, closely fringed, of nearly the same width throughout; fore pair with a very faint, brownish, median streak in basal third, and with about 12 accessory hairs; hind wings clear. Fore tarsi unarmed.

Abdomen of normal form, rather large and heavy, and wider than pterothorax. Tube about three fourths as long as head and about 2.2 times as long as basal width, which is slightly less than twice the apical. Lateral abdominal bristles scarcely pointed and blackish brown in color; terminal bristles pointed, brown, about equal in length to tube.

Measurements of holotype: Length, 1.56 mm.; head, length 0.200 mm., width 0.193 mm.; prothorax, length 0.123 mm., width (inclusive of coxæ) 0.308 mm.; pterothorax, width 0.378 mm.; abdomen, width 0.418 mm.; tube, length, 0.151 mm., width at base 0.069 mm., at apex 0.037 mm.

Antennal segments	1	2	3	4	5	6	7	8
Length (μ)	—	55	66	64	59	54	51	29
Width (μ)	33	30	30	33	32	31	25	14

Total length of antenna, 0.420 mm.

Male (*macropterous*).—Length about 1.4 mm. Slightly smaller and more slender than female. Upper lateral pair of bristles at apex of segment 9 of abdomen much shorter than basal width of tube, the lower lateral and dorsal pairs of normal length.

Measurements of allotype: Length 1.36 mm.; head, length 0.188 mm., width 0.180 mm.; prothorax, length 0.108 mm., width (inclusive of coxæ) 0.288 mm.; pterothorax, width 0.327 mm.; abdomen, width 0.349 mm.; tube, length 0.151 mm., width at base 0.069 mm., at apex 0.033 mm.

Antennal segments	1	2	3	4	5	6	7	8
Length (μ)	—	50	59	59	54	51	49	29
Width (μ)	29	28	28	31	30	28	22	13

Total length of antenna, 0.378 mm.

Described from one female and one male, the former taken from *Ostrya virginiana* on Plummer Island, Maryland, April 28, 1915, by L. O. Jackson; the latter taken from a leaf of *Quercus* sp., at Great Falls, Maryland, May 23, 1915, by the writer.

The pale knees and the antennal coloration of this species are unique in the genus, and the head is unusually short.

LONG ISLAND COLLECTING NOTES.

By Wm. T. Davis, New Brighton, Staten Island, N. Y.

The Periodical Cicada from 1910 to 1914.

The seventeen-year cicada occurs on Long Island, N. Y., in numbers at the most unexpected times. In June, 1910, they were in great abundance in the Half Way Hollow Hills, as reported in the Journal of the New York Entomological Society for December of that year. Brood No. 1 (1910) had not heretofore been recorded from New York State, but was known to occur more to the south and southwest.

Brood No. 2 (1911) was in its usual abundance on Staten Island and in the valley of the Hudson, but on Long Island very few of the cicadas were found. I spent part of May 31 in the Half Way Hollow Hills looking for cicadas where they had been so common the year before, but without success. Mr. Watkins of Wyandanch said he had seen two seventeen-year cicadas near that village several days previous to my visit, and later Mr. Frederick M. Schott heard several near the same place. But one or two individuals were reported from the western end of the Island during 1911.

On May 31, 1913, at Deep Pond near Wading River on the north side of the Island, a single seventeen-year cicada was heard singing a number of times in a tall oak. On May 31, 1914, I collected at Deep Pond a number of pupa skins, two cicadas and heard a number of others singing. Later we heard one singing about a mile to the northward and found three of their cones on a shaded wood path. Returning to Wading River on July 24, we noticed from the car window, about a mile to the west of the railroad station, many oaks and other trees on the north side of the track in which the cicadas had laid their eggs, causing the death of the smaller branches. During the following two or three days we found that the seventeen-year cicada had been very common about Deep Pond and on the easterly side of Long Pond. At the former pond Mr. Engelhardt, Mr. Schaeffer and I might have collected a pint of the dead insects and their pupa cases. Under date of June 9, 1914, Dr. Frank Overton, of Patchogue, wrote me that the seventeen-year cicadas were spread over several square miles northwest of Calverton, about two miles from the Deep Pond locality mentioned above. He said he had taken "particular notice of them for three miles along the Riverhead, Coram road about one or two miles north of the station. They reached all the way to the elevated lots and even scattering ones were found nearly into Riverhead."

A glance at the circular of information concerning the

"Periodical Cicada in 1914," issued by the U. S. Dept. of Agriculture, May 27, 1914, will show that Brood V was not expected to occur in New York state, but was supposed to be confined to Ohio, Virginia and parts of Pennsylvania. From the foregoing it will be seen that the Long Island broods of seventeen-year cicadas are of much interest and every effort should be made to find out more about them.

It may be added that seventeen-year cicadas occurred in some numbers on the government reservation at West Point both in June, 1913, and again in June, 1914; also that several were found on Staten Island during those years, but they did not constitute a swarm as they did to the northwest of Calverton and at Wading River in 1914.

THE FUNGUS-GROWING ANT NEAR SMITHTOWN.

In the Journal of the New York Entomological Society for March, 1914, the finding of *Atta septentrionalis* McCook at Wading River, in June, 1913, was recorded. In 1914 the range of this ant on Long Island was much extended, for on June 1, a number of nests were found by the side of the forest-shaded road that runs from the main road west of Hauppauge northwardly and nearly parallel to the Nissequogue River. Additional nests were found near Smithtown. While the ground is sandy along the Nissequogue, and while there are a few post-oaks and red cedars, the heavily forested country does not remind one of the haunts of *Atta* in New Jersey as far it has been recorded and from personal experience. The same may be said of the situations where it is found at Wading River about 21 miles to the eastward of Smithtown.

RESULTS FROM WADING RIVER.

As a number of insects of interest were found at Wading River during the Decoration Day holiday in 1913, it was thought advisable to visit the place at the same time in 1914, to see if these insects were still to be found. Accordingly on May 29 Mr. Barber, Mr. Olsen, Mr. Nicolay and I went to Wading River, where we stayed until the 31st.

Alsophila pometaria caterpillars were nearly as abundant as they were in 1913 and were being devoured by *Calosoma frigidum* and *Calosoma willcoxi*. The same species of caterpillar, a day or two later was found near Nessequogue, about 20 miles to the westward, where it was doing considerable damage to the trees.

The bug, *Tetyra bipunctata* was in considerable numbers at Wading River on young pitch pines; in 1913 only a dead one was found on the beach.

The grasshopper *Eritettix carinatus* was as usual in the field near the large boulders, where we also collected the butterfly *Euptoieta claudia,* pointed out by Mr. Nicolay.

The usually rare beetle *Nicagus obscurus,* was if anything more common on the up-beach than in 1913, but *Cremastochilus harrisii* was not so plentiful. The beetles *Cychrus lecontei, Elytroleptus floridanus, Phymatodes varius, Phymatodes amœnus* and *Acmæops discoidea* were collected.

The little mole-cricket *Tridactylus terminalis* was found along the shore of Deep Pond as in 1913.

On June 1, *Centrodera picta* was beaten from a chestnut oak at Nissequogue, and on July 26 several *Cicindela marginata* were found along the banks of Wading River.

NOTES ON COLEOPTERA.

Anent local captures possibly having a bearing on the southerly entension of a Boreal fauna or northerly of the Floridian and Carolinian, Norman S. Easton, of Fall River, Mass., writes:

Malachius aeneus has been here a number of years; my local record specimen bears the date May 15, 1904, and it is now common on dandelion blossoms in the spring.

Trechus chalybeus, or what I call by that name, is found occasionally in sifting in late fall or early spring.

I have never taken *Strategus antæus,* though there is a Rhode Island record for it.

Canthydrus puncticollis, Ancyronyx variegatus, Ceutorhyncus *hamiltoni* are also interesting captures of which I have a few duplicates for any one desiring specimens.—N. S. E.

April 11, near Central Park, Long Island, I took a specimen of *Tricrania sanguinipennis,* on the ground. An abundance of adult tettix near by suggests a possible life history. A. B. Champlain has taken them near New Haven, Conn., in a ploughed field where there were many bee burrows. They have been taken by A. H. Manee at Southern Pines, N. C., and are included in Ulke's list of beetles of the District of Columbia. L. H. Joutel has specimens with state labels, "N. Y." and "Mass." It is not included in Smith's New Jersey list and has not been taken by the experienced collectors of Philadelphia, Newark or New York. Local captures are recorded by Norman S. Easton, near Fall River, Mass., and by C. A. Frost, Framingham, Mass.—R. P. D.

Hylecoctus lugubris, taking flying at Ft. Lee, N. J., April 18, 1915, was described from Indiana, is not in the New Jersey list, and is apparently extremely rare. Specimen was given to the American Museum of Natural History. Notes on distribution of this species would be very interesting.—R. P. D.

Amphizoa insolens. One specimen taken from stomach of a trout in Paradise Valley, King River Canyon, Sierra Nevada Mts., 7,000 feet, August 6, 1914, by R. L. Beardsley.

Desmocerus auripennis. Three specimens on elderberry, same locality and same collector. Specimens of *californicus* were taken spring of 1914 near Pasadena by Alonzo Davis.

Chrysobothris sp. A female from Bullfrog Lake, 10,634 feet, August 11, 1914, by the writer, comes from a somewhat high station.

Agabus lugens. Common in a small glacial lake, same locality.

Metrius contractus. Probably same as *sericeus* Rivers. Nice series taken by R. L. Beardsley near Camp Nelson, Tulare Co., September, 1913.

Xylotrechus insignis. A specimen of this beautiful beetle taken July 2, 1914, in the upper Arroyo Seco Canyon, San Gabriel Mts., on a Yucca.—FORDYCE GRINNELL, JR.

My best captures this season were three males and five females of *Strategus mormon* from the Medora (Kansas) sand hills. I also took eggs, but did not have the proper environment to raise them. I took long series of *Cicindela scutellaris, formosa* and *venusta*, and an exceptional lot of *Cremastochilus nitens*. Also lots of *Stephanuca pilipennis, Plocamus difformis, Onthophagus guatemaliensis* Bates, and *Cotalpa subcribrata* Wickham. I took three *Bradycinetus fossor*. I took also imagos, larvæ and pupæ of *Phytonomus eximius* with an interesting Hymenopterous parasite at Lincoln, Kans., sending all the material to Dr. E. G. Titus.—Warren Knaus, McPherson, Kan.

OBITUARY.

By the death of J. Turner Brakeley, aged sixty-eight, at his home, Lahaway Plantations, Ocean County, New Jersey, there has been taken from the world an unusual and beautiful character. The only child of Rev. J. Henry Brakeley, founder and life-long president of Bordentown Female College, he was graduated from Princeton in 1869 and from the Harvard Law School in 1872. On the completion of his studies he withdrew to the cranberry estates at Lahaway, which he never left except for brief annual trips connected with business, mostly to Bordentown, where he owned the mansion built by Jerome Bonaparte. His life was that of a recluse. No highway approaches the land which he loved with the passionate intensity of a Thoreau, and which is of singular beauty as well as interest, having probably the largest variety of flora and fauna of any place of equal size in the country. He died as he had hoped to do, surrounded by the simple folk of his countryside, his only neighbors and those of his choosing. No printed work has come from him. He was one of the poets through whose soul surged a beautiful and unwritten song.

Possessed of ample means, he reserved a few hundred dollars a year to meet his simple wants. The rest was held as a trust to be expended as need be with an idea of general "uplift,"—his own phrase. His sound judgment in public and private affairs, his care over his own generosity made him generally known and beloved through three counties.

This man could have taken rank as one of the leading scientists of America, but he preferred that his discoveries be given to those in the profession who could benefit materially by them. Almost the only way he was known to science was through his friendship for John B. Smith, in whom he took a fatherly interest from 1883 until the latter's death, in 1912. Brakeley was the American pioneer in mosquito study, taking it up in 1872. Few eastern forms are unrepresented either by Brakeley types or complete life histories, which were sent either to Smith or Dr. Coquillett, at the U. S. National Museum. The list of them is preserved in Smith's List of the Insects of New Jersey. It was he who taught to Smith the rudiments of mosquito study and induced that indefatigable worker to make it the keynote of his professional career. Of the records of insects in all orders in the New Jersey List far more came from Lahaway or were made by Brakeley than from any other authority.

To satisfy a request from Smith for some method of studying the burrows of underground insects Brakeley invented the method of taking plaster casts, which has been too little followed, as the average worker lacks the delicacy of touch necessary to dissect out the slender tube representing the work of some bee five or six feet below the soil level. A long and unrecorded study of the species of *Cicindela* by their distinctive burrows with proofs of the two-year existence in larval form has died with Brakeley. A thousand other studies cannot even be mentioned here.

As a botanist, albeit with a contempt for the taxonomic side of the study, Brakeley excelled, for he noted every form and counted each bloom. Cultivation at Lahaway was almost abandoned in favor of the wild growth. The rarest orchids preëmpted the richest spots in the cranberry beds.

The master of Lahaway never ceased to mourn the untimely death of Smith. His tender solicitude was, in a way, transferred as a legacy to the present editor of the BULLETIN OF THE BROOKLYN ENTOMOLOGICAL SOCIETY, Smith's first and favorite society.

Without near kin, this remarkable man found his chiefest pleasure in watching the delight or success of a friend.—R. P. D.

AN UNDESCRIBED SAPROMYZID (DIPTERA).

By J. R. Malloch, F.E.S., Urbana, Ill.

On August 30 and September 1 of this year I found single specimens of an apparently undescribed sapromyzid on a wound on an elm tree from which sap was exuding. At the first glance the species appeared to belong to the Drosophilidæ, but a closer examination showed that while there are certain similarities the species does not really belong to that family, and has more affinities with the Sapromyzidæ. I have during the present year been paying a considerable amount of attention to the early stages of Diptera, and it has been more the exception than the rule that I have discovered undescribed species, although in the case of the minute forms several have been found of which the present is one.

The characters which appear to associate this genus with the subfamily Lonchaeinæ of the family Sapromyzidæ are as follows: Orbits with one reclinate bristle; postverticals divergent; arista plumose; third antennal joint slightly longer than broad; face slightly concave; vibrissæ undifferentiated; mesonotum with two pairs of dorsocentrals, scutellum slightly convex, rounded in outline; abdomen short and broad; auxiliary vein weak; anal cell present; preapical tibial bristle absent.

Phorticoides, gen. nov.

Generic characters: Auxiliary vein very short, ending at two-fifths from base of first vein, abruptly bent towards costa near apex, the angulated portion indistinct and not extending to costal vein; costa ending at apex of third vein; anal cell present, the cross vein closing it apically indistinct; inner and outer cross veins present, not approximated; anal vein indistinct, not extending to wing margin.

Type of genus: *Phorticoides flinti*, sp. n.

Phorticoides flinti, sp. n.

Male. Black-brown subopaque. Head subopaque; frons covered with gray pruinescence; orbits yellowish, especially anteriorly; face and cheeks yellow; antennae brown, third joint whitish yellow; labrum glossy brown; proboscis and palpi dusky yellow. Thorax subopaque, dorsum with dense gray pruinescence; disc with seven vittae, median one broad and conspicuous, its anterior extremity narrowed; submedian pair slender and poorly defined; submarginal pair slender, extending from posterior margin to middle of disc; marginal pair as broad as median vitta; pleurae yellowish, with two broad longitudinal vittae, one on upper margin and the other over upper portion of sterno-pleurae; scutellum brownish, disc with grayish pruinescence, apex yellowish; postnotum glossy black. Abdomen black, glossy; anterior margins of segments with a subtriangular silvery pruinose spot on the lateral angles. Legs pale yellow; fore coxae with a brown spot on anterior surfaces; femora and tibiae biannulate, one subbasal, the other subapical; apical joint of all tarsi brown. Wings clear, veins yellow. Halteres pale yellow.

Frons, viewed from above, over one half the head width; ocellar region slightly elevated; ocelli in an equilateral triangle, distance between outer margin of posterior ocelli and eye margin about twice as great as distance between outer margins of those ocelli; postvertical bristles widely divergent, each about half as long as outer vertical one, the latter scarcely more than half as long as inner vertical; the single orbital bristle slightly longer than outer vertical one, located about midway from base of latter to base of antennae; orbits with a few weak setulae anterior to the bristle; center stripe bare; ocellar bristles strong, slightly divergent, subporrect; face concave, median carina weak; viewed from in front the eyes are decidedly convergent below; antennae rather large; second joint with a few dorsal setulae; third joint elongate, its length about over 1.5 its breadth, upper margin rather acute at apex, lower margin rounded apically; arista long plumose, situated near base on dorsum; mouth margin slightly protuberant; cheek narrow, about one sixth as high as eye, marginal bristles rather numerous; eye twice as high as long, surface with sparse hairs; labrum protuberant; proboscis fleshy; palpi normal. Mesonotum with two pairs of dorso-central bristles; disc with rather sparse setulae; prescutellar bristles present; mesopleura without bristles; sternopleura with two bristles on upper margin; scutellum with four bristles, the basal pair weak. Hypopygium inconspicuous. Wing rather large; distance from humeral vein to end of first about two thirds as great as next division; costa not broken anywhere; second vein arcuate, bent towards third at its apex; fourth vein very slightly divergent from third at its apex, its apical portion about two and a half times as long as its preapical, the latter nearly twice as long as outer cross vein and slightly shorter than last section of fifth; inner cross vein very slightly before apex of first, costa without spines.

Length, 2 mm.

Type locality, Urbana, Ill., August 30 and September 1, 1915 (J. R. Malloch).

The species is named in honor of Mr. W. P. Flint, who has obtained many interesting species for the collection here and who was with me when I took the type specimen.

OFFERTA ET DESIDERATA

WANTED.—Pupæ of *Papilio ajax* and *rutulus.* Ward's Natural Science Establishment, 84 College Ave., Rochester, N. Y.

All kinds of Chrysalids, Cocoons, and Pupæ wanted in exchange for North American lepidoptera. Address: Herman H. Brehme, 74 Thirteenth Ave., Newark, N. J.

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WANTED.—No. Am. Cerambycidæ and Buprestidæ, especially *Agrilus;* will collect insects of any order in this locality for exchanges in above families. C. A. Frost, 26 Pond St., Framingham, Mass.

The undersigned will greatly appreciate receiving records of New Jersey species not listed in Smith's Insects of New Jersey.—Harry B. Weiss, 242 Raritan Ave., New Brunswick, N. J.

WANTED.—Transactions American Entomological Society, vol. IV.; Entomological News, vol. II., nos. 6 and 10, or the whole volume.—Howard L. Clark, Box 1142, Providence, R. I.

Fine specimens of the large Mantis, *Paratenodera sinensis,* collected at Mt. Airy, Philadelphia, Pa., offered in exchange for North American Lepidoptera—Philip Laurent, 31 East Mt. Airy Ave., Philadelphia, Pa.

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BULLETIN
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DIRECTIONS FOR COLLECTING COLLEMBOLA.

By J. W. Folsom, Urbana, Ill.

Collembola, otherwise known as "springtails," are common in all climates, and may be expected to occur wherever there is a soil that supports vegetation. They are small insects, usually one or two millimeters in length and seldom longer than four or five millimeters. In form they are either elongate (Fig. 1) or globular (Fig. 2). Most of them are able to leap, when disturbed, by means of a peculiar forked appendage known as the furcula; but not a few species lack the furcula, and these sluggish forms might at first sight be mistaken for larvæ of some sort.

Collembola are most abundant in damp situations. There are some species, provided with scales, that may be found in dry places, but most species require an atmosphere that contains considerable moisture. Springtails may be looked for in any soil that is not too dry, and are usually numerous in grass lands and cultivated fields. They are common under sticks or stones on damp soil. Many species occur in woodlands in the humus, beneath decaying leaves, under or within damp logs, under loose bark, on trunks of trees and on low vegetation. Many species inhabit moss and fungi. Some species frequent ants' nests in the ground or in logs. Various forms occur in manure piles and in decaying vegetables. Many kinds are found on pools of water and along the shores of streams or ponds. Some species get into wells. Not a few species occur on the seashore, under stones, driftwood or seaweed, on dead mollusks or fishes, or on tide pools. Many kinds of Collembola occur in caves, certain species having no other habitat. Collembola are usually abundant in green-houses, which often furnish interesting exotic species and are good places for winter collecting. A considerable number of species can be collected out of doors at any time during the winter, though they may be found more easily during a thaw. Certain species are found on the snow, sometimes in immense numbers.

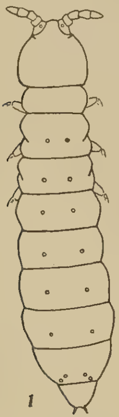

FIG. 1.—*Onychiurus cocklei* Folsom.

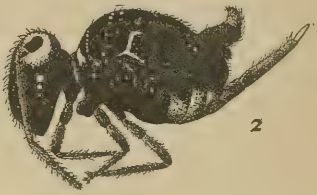

FIG. 2.—*Sminthurus hortensis* Fitch.

The essentials for collecting Collembola are glass vials or tubes and small brushes; camel's hair brushes or cheap paint brushes serving the purpose. Homeopathic vials may be used but are objectionable on account of neck and lip. The straight vials known as shell vials are better, but I prefer a simple glass tube 10 mm. in diameter and 55 mm. in length, with rounded bottom; this diameter enabling one to examine the contents with a half-inch lens. Such a tube is made to order for 75 cents per gross.

Some collectors obtain their specimens by touching them with a brush wet with chloroform or some other killing agent; or pick them up on a brush moistened with glycerine; but the specimens thus collected are not in the best condition for study. I always collect specimens alive and kill them at home by pouring on them strong alcohol heated in a test tube to a temperature a little below the boiling point. If killed with a hot fluid the specimens die in a relaxed condition with the appendages extended in a manner favorable for study and without shrinkage or other distortion.

It is not difficult to collect specimens alive by pushing them into a glass tube with the aid of a brush. Then, if one puts into the tube bits of damp wood, pieces of decaying leaves, or a little moist earth, the springtails can be kept alive for many days, if necessary.

There are certain special methods of collection that may be employed. For collecting minute specimens—half a millimeter or less in length—a watchmaker's or engraver's glass, fastened to the head, or a reading glass is helpful in diminishing eyestrain. Two pieces of cloth, one black and one white, are useful on which to shake green plants, fungi, dead leaves, or other material. The Berlese apparatus for collecting minute arthropods yields immense numbers of Collembola. This apparatus is essentially a large metal funnel surrounded by a can of hot water, with a wire screen across the mouth of the funnel. On the screen are placed soil, decaying leaves, fungi, moss, bark, or other material containing specimens. The organisms move downward toward the heat and pass through the funnel into a bottle of alcohol. If the alcohol is hot it will fix the specimens properly. To get the most out of the Berlese apparatus use "siftings." In other words, sift the material as soon as it is collected through a wire screen with a quarter-inch mesh into a canvas bag, thus getting rid of most of the debris, and use this concentrated material in the apparatus.

Collembola on the surface of a pool can frequently be lifted from the water on a brush, but too often it happens that they escape. They can be collected with a net, of course, a small wire strainer lined with cheese cloth serving the purpose. When after these forms in earnest, I use an atomizer to spray the surface of the water with chloroform, and then collect the dead specimens with a net. One of Professor Needham's students sent me hundreds of specimens of these water-frequenting species that were collected in an ingenious manner. Little tents were placed on damp soil on the borders of pools and streams, and into these tents the Collembola came in immense numbers.

When collecting Collembola be sure to get several or many specimens of the same species if possible. This is usually not difficult to do, as most species occur in colonies. I have many new species that I have preferred to leave undescribed on account of having an insufficient number of specimens. It is often necessary to treat specimens with reagents or to dissect off certain structures in order to make out some of the specific characters; in other words, to injure the specimen in order to find out what it is. In the case of a new species the specialist should have at hand enough specimens to show, at least approximately, the range of variation in specific characters, and plenty of material for museums, for other specialists, and for his own future use.

It goes without saying that all specimens should be labeled properly; and it is much better to put the data in or on the tube with the specimens than simply to give the latter a number.

Collembola should not be mounted on card points, for the integument is so delicate that they shrink badly. Shrunken specimens can be restored to a semblance of their natural form by the use of dilute potassium hydroxide, but are never so satisfactory for study as specimens preserved in alcohol or formaline.

Alcohol of 80 or 85 per cent. is better than strong alcohol (95 per cent.), as the latter makes the insects brittle.

Four per cent. formaline preserves certain colors that are not permanent in alcohol. The advantages of formaline as a preservative are well known. It economizes space and is inexpensive. On a camping trip or a journey to the ends of the earth, only a comparatively small amount of formaldehyde need be carried, which may be diluted when necessary by mixing it with twenty-four times its volume of water.

THE LAND OF THE ROSE APPLE TREE.

By R. P. Dow, Brooklyn, N. Y.

One of the oldest words in the world, which has not passed from land to land, changing its form while retaining its root, is "jambos." For the jambos tree is confined to India, save where it is shown in botanical gardens. Its fruit tastes a little like a full-blown rose smells. In the earliest known time all tropical India was known as the Land of the Rose Apple Tree. For an account of the people and the times we have one book, more important than all the rest, the epic poem, the Mahābhārata, which is eight times as long as the combined works of Homer. Like the Iliad it deals with kings, princesses, nobles, warriors. But, the life it describes is like the rose apple, sweet. Men were brave and women virtuous. Contemplation turned toward God and the beauties of nature. Those were simple times, simple people, simple thoughts.

For thousands of years Occidental civilization knew nothing of their existence. Less than 150 years ago a vast literature was discovered and brought to Europe. It included the Avesta of Zoroaster in the Zend tongue of which a small tribe of Parsees are still devotees, and a mass in the tongue now known as Sanscrit. Most of this had been lost since the Saracen conquests in the seventh century, A. D. Millions of men still retain a knowledge of the Sanscrit, being descended from that people. But they kept it as long as possible from irreverent European eyes. Later discoveries have brought the volume of Sanscrit literature to a size greater than all existing classic Greek and have presented a vocabulary greater than that of the Latin language. There are many dialects of Sanscrit, from the earliest, which is the religious tongue, to latest, which is the daily speech of a common people. By common consent the Rig Vedas are considered the earliest—a great collection of hymns to the Deities. No generally acceptable date has ever been suggested for these. One guess is as late as 1350 B. C. It is probable that the low Sanscrit was a living language after the Christian era. Almost all scholars concur in thinking the Rig Vedas among the oldest, most primitive, remains of human literature. Are they, then, earlier or later than the Avesta, for which a date of about 6,400 B. C. is positively suggested? That it is late is indicated by the Sanscrit knowledge of the honey bee, which the Zend people did not know. The place of origin is unmistakable. It was where the parrots chattered from the tree tops and the elephants were both wild herds and domesticated as beasts of burden.

A translation of the Sanscrit words describing insects is a task so far very imperfectly performed and one of great difficulty, for the references are wholly incidental. A translator with the unusual qualification of being entomologist as well as linguist has first to correct many mistaken meanings and must take into consideration that the Sanscrit authors had very vague ideas about the insects themselves. Most of them represent some observation of habit, injurious or otherwise, which cannot be referred to any single species or even natural group.

In one of the older Vedas there is advice to a prince not to make too many enemies near home. "Even a proud serpent is destroyed by insects when there are many of them." The word used is *kitai*. It often occurs in the tropics that the driver ants assail and overcome the large snakes by sheer force of numbers. There is probably no other insect which performs the feat. Yet it is not wholly fair to translate *kitai* as driver ant, for the word may have a different application in some other passage. To call it insect is all one can safely do. It has no known etymology and may be one of many borrowed from Dravidian neighbors or predecessors.

A similar passage in the Vedas speaks of the necessity of weakening opposing armies internally. "Just as a fine timber falls to pieces when riddled by insects." The word here is *ghuṇa,* also of uncertain etymology. That it applies to wood boring insects is indubitable. If the writer of the passage had himself a concrete idea on the subject, he might have understood many kinds of beetle larvæ, but more probably the termites (white ants), for boring beetles seldom riddle timber until it falls readily to pieces, while the damage by termites is generally complete destruction.

Another passage speaking of a slain foe: "the contents of his bowels they kept for the çavartas." Roth translates this as "maggots" with probable correctness. If the thing were an animal or bird of prey it would have a well-understood name. It refers almost certainly to some scavenger insect, the hosts of which had no names. The word *krimi* is classic Sanscrit and certainly means worms, undoubtedly a very general term. In the Atharda Veda they are exorcised as an intestinal worm, of which many kinds are known in India.

Here is an invocation to a Serpent Divinity: "Let every wild beast, every fly (*mashika*), every worm (*krimi*), sate itself on the carrion of man, bitten by thee, O Arbudi!"

The Sanscrit word *krims*—plural *krimi*—presents no difficulty. It reappears in Latin as *vermes,* or exactly the same in root and application in English as worms. The English vermin has departed far in meaning but is, of course, the same as the Latin congerer.

From the Mahābhārata ones learns of the flight the princess Damayata through the forest, listening to the trill of the *jhillikas.* This word is explained by a commentator as meaning a large wood cricket. Certainly it is the forebear of the word *Gryllus,* which is cricket from Rome until today. It is an attempt at imitation of the trill of the cricket.

The Princess Damayata continued her way through the forest. There follows in the narrative a catalogue of trees under which she passed. It is a list of *nuda nomina,* but interwoven to make perfect meter for about two pages. The species mentioned are probably three hundred. It is wonderful metrical skill, but is it poetry? I refer for an answer to any one who has read the list of flowers in the old neglected garden, given by Shelley in his Sensitive Plant. If this primitive Sanscrit people had familiar names for three hundred trees, how many insects did they know?

What can you make of this beautiful passage describing the Sinners' Road, translation of Sir Edwin Arnold from the Mahābhārata?

> ". . . where there buzzed,
> And sucked and settled, creatures of the swamp,
> Hideous in wing and sting, gnat clouds and flies,
> With moths, toads, newts, and snakes, red gulleted;
> And livid, loathsome worms, writhing in slime,
> Forth from skull holes and scalps and tumbled bones."

A passage from the Rig Vedas: "The host of biting things too small to be seen." This suggests the acarine red bug, a pest to all tropical travelers, but what did the author understand by them, more than he has stated?

Or, try this:

> "Before your face he falls at your feet, but behind your back he bites you.
> In your ear sweetly and gently he hums something lovely.
> But if he finds out a weak spot, or breach, or unguarded place,
> Suddenly he enters without hesitation.
> All the doings of a scoundrel doth a mosquito."

This last word is a guess, except that it is an insect. Is it the earliest mention in the world of a mosquito?

For one insect there can be no error, although in this dateless age one may not discriminate between a thousand species of Muscidæ, Syrphidæ, and many other Diptera. An annual festival was set apart for the flies. Little dishes were set outside the houses, containing flour and that which has been translated as "sugar" but which probably means cane or some other sweet matter. If the Greeks did not have sugar it was probably unknown to the people of Sanscrit.

The Sanscrit word here employed is *máksika,* a feminine form from *máksa,* fly. The Zend transposes the k and s, *mashki.* This is beyond any doubt the Latin *musca.* It is less certainly the Greek *muia.* It is hardly the Persian *maka* or *myci,* which fathers the word for ants.

The confusion of the Turan tribes of *maka,* or *myci,* or various spellings arises from the vague translations of Sir Henry Rawlinson. The *mike* appears again as the Myrmidons, and are the ants. They were a tribe of Turan. The word *myrmex* is merely *muria* plus *mike, i. e.,* the ants occurring in 10,000 colonies. You remember that when Achilles, son of Peleus and Thetis, both demigods, appeared with the Greek forces before Troy, his army, coming from Macedonia was of Myrmidons. The poet declares that the war against Troy was over Helen, wife of a Greek king, who eloped with Paris, son of the king of Troy. But the cruel science of chronology steps in to assert that when Paris was 21 years old Helen was anywhere from 90 to 110. Such elopements might have happened, but—. The truth of the matter is that the Trojan war, which occurred nearer 1325 B. C. than 1100, the two dates being those of extremes of conjecture, was merely a single campaign in the ten thousand years of warfare between Iran and Turan.

A thousand years later Alexander, King of Macedon, claimed for himself and his people admittance to the great games open to all freeborn Greeks asserting that he was a lineal descendant of Achilles. The Myrmidons, ancestors of the Macedonian race, came, it was claimed, from the island of Ægina, hard by Athens. The island having become depopulated, the gods gave permission to an ancestor of Achilles to repopulate by converting the ants into human beings. These migrated to Macedonia, and always boasted of being descended from ants.

The Amphictyonic Council, the body governing the Olympic games, were inclined to reject Alexander's claim, and modern science would sustain the objection that the legendary origin was unnatural. However, it is a brave council which crosses the path of a world conqueror. It finally officially declared that the Myrmidons were freeborn Greeks, descended from the ants of Ægina. More probably the truth is that the Myrmidons were descendants of the Turanic tribe (or tribes) known as "ants," and formed the exception to the rule of Iran versus Turan.

The Mashki (flies) a distinct race of Turan, also held their own through classic times. As the Moschi (compare *muscæ*) they were mentioned by both Pliny and Strabo as a people indefinitely situated between the Black and Caspian Seas. We must emphasize the distinction. There were two tribes. The Mici, or Mike, finally reached Thessaly. The Muiai or Mashki or muscæ were among those who preserved their identity until the indefinite period between the times when the Arabs overran and introduced Islamism and the Asiatic conqueror, Genghis Khan, broke down almost all tribal distinctions in the original homes of all Turan.

The maksiki, mashki, muiai, muscæ, as words, are akin to the German mücke and the English midge, but it does not follow that the specific creature known in different tongues by this root word is the same in species, family or order. It does follow, however, that it is the same in a vague interpretation of a biting annoyingness.

When the Spaniards overran the West Indies, Florida, Central America, etc., they encountered an insect pest of no mean quality. It needed a name. So they took musca, the fly, made it masculine, and then, since the creature was smaller than the house or stable fly, added a diminutive, making the word mosquito. The word means the little male fly. The Spaniards did not know that the female of the species is more deadly than the male. Within a hundred years we have discovered that the female only bites.

It is well to take notice that the word mosquito is American, and not European. The English equivalent is gnat. This latter will appear many times in future pages of a history of insects.

We note the Sanscrit idea of preservation of all life, since it may contain a transmigrating soul. Every insect must be saved in early India, even to the fleas and that which is generally translated as "bug" and can only apply to the cosmopolitan and prehistoric bedbug. The Rabbinical Hebrew cosmogony of the flies does not differ far from the Zend and Sanscrit. Lilith, who was Adam's first wife, she with hair like ropes of gold (Eve being brunette to the point of Ethiopianism), after a divorce married Beelzebub, prince of devils, and bore to him a troublesome progeny, including the flies and other noxious insects. Of this idea of preservation there is a curious survival even today, in Egypt, especially, where the chief cause of the horrible ophthalmia everywhere present is the superstitious fear of brushing away the flies, even from one's eyelids.

SOME OBSERVATIONS ON THE BUTTERFLIES OF KING RIVER CANYON, SIERRA NEVADA MOUNTAINS, CALIFORNIA.

By Fordyce Grinnell, Jr., Los Angeles, Calif.

From July 20 to August 16, 1914, Mr. R. L. Beardsley and the writer crossed the great Sierra Nevada range of mountains from Sanger in the San Joaquin Valley to Independence in Owen's Valley—just one month—spending two weeks in the wonderful gorge of King River canyon, near Kanawyer's. From Sanger to Hume Lake consumed one whole day's auto stage ride, going through the General Grant National Park of giant redwood trees; and from Hume to Kanawyer's a day and a half horseback ride, the night being spent at Horse Corral Meadows; next morning, July 24, we got an early start and rode through the beautiful forests and soon after passing Summit Meadows we got our first glimpse of the King's River canyon, and also began the rather rapid descent into the canyon bottom, passing another party coming up. On our way down this slope I saw some white butterflies sailing leisurely around the tops of the yellow pines; I managed to catch two specimens from my riding horse, which proved to be *Neophasia menapia,* the first time I had seen the species in life. We reached Kanawyer's about noon, after a most charming ride through the canyon, looking up at the great granite cliffs and domes rising a mile or more above us, crossing the bridge over the good-sized King River, and the groves of golden and Kellogg oaks, and yellow and sugar pines. It was an experience entirely new to me and so the impression was great and indescribable. At Kanawyer's we had a fine dinner including trout; in the afternoon we selected a camp site for our two weeks' stay, down near the river, a fine place except for the mosquitoes at times. That night was especially and uncomfortably warm and close.

Next day I walked down the canyon to Cedar Grove and part way up the slope of the previous day's descent, with the idea particularly of obtaining more specimens of the interesting pine butterfly—the only one living on pines except another of the same genus in southern Arizona and Mexico; I took eight specimens and the packer captured one near Kanawyer's on my return. Saw also *Junonia cœnia, Colias eurytheme, Argynnis monticola, Anosia plexippus, Pyrameis cardui*—all except the *Argynnis* and *Neophasia* widespread in distribution. Also near Cedar Grove took a fine specimen of *Meganostoma cæsonia* or perhaps being an atavistic specimen of our western dog's head butterfly, *M. eurydice. Thecla grunus* was numerous around the Golden Oaks; also in the same places, *Heterochroa californica; Lycæna acmon* was common as elsewhere. Saw a few wary underwing moths, *Catocala,* around the trunks of the trees, of which a specimen was taken near Kanawyer's.

On July 26 we went to the upper end of Paradise Valley on the South Fork, where the mosquitoes were worse than ever and almost intolerable, but with fine trout fishing. The canyon is a wonderful rocky gorge with many beautiful cascades and snow-slides. Found the pine butterfly here, also the *Argynnis,* and a large moth, *Pseudohazis eglanterina.*

On July 28 and 29 we went up Copper Creek to Goat Mountain (over night), Grouse lake, Mt. Hutching's ridge and Mt. Hutchings (10,787 ft.), overlooking King's River canyon, Granite Basin and from which a fine view of the High Sierras in every direction could be had. On the ridge and to the summit I took a nice series—for the first time—of the Arctic butterfly, *Chionobas ivallda* (Mead), near the snow banks, but lighting on the grayish granite which the undersides of these insects exactly resemble. On the rocky summit of Mt. Hutchings we saw more of the arctics, and also the common swallowtail, *Papilio zolicaon;* the swallowtails have a particular predilection for the summits of peaks. In Copper Creek canyon, around the little cienegas or meadows, we found numerous little blue butterflies, *Lycæna fulla; Phyciodes;* and some Hesperids. The brown hair streaks, *Thecla grunus,* were numerous around the golden oaks in Copper Creek canyon, back of Kanawyer's, the brownish undersides harmonizing well with the golden of the oak leaves.

The last week of our trip was consumed in a knapsack trip up over the crest of the Sierras at Kearsarge Pass, about 12,000 feet elevation, spending most of the time at Bullfrog Lake, 10,634 feet, where a series of Behr's alpine sulphur, *Colias behrii,* was taken; as well as other interesting things, *Lycæna battoides* (typical), *Chrysophanus cupreus,* and *editha; Lycæna podarce, Pamphila sabuleti tecumseh,* and at Charlotte Lake saw a *Parnassius.* On our way back we took a fine *Chionobas* near the summit of Kearsarge Pass and the trip down the abrupt western slope, from 12,000 feet altitude to 5,000 feet altitude was made in a half day with our knapsacks. Just above Kearsarge Pass we climbed Mt. Gould, 13,000 feet altitude, the highest we reached. This is a region of wonders and contrasts—from snow banks and a frozen lake, to the burning heat of a near desert in a half day, on foot!

A NEW MEMBRACID FROM TRINIDAD.

By W. D. Funkhouser.

(Contribution from the Entomological Laboratory of Cornell University.)

Through the courtesy of Mr. Chris E. Olsen, of Maspeth, L. I., I have been permitted to examine a series of specimens of this very interesting new species belonging to the genus *Stegaspis* Germ. of the family Membracidæ.

No species have been assigned to this genus since 1858* and indeed the standing of the genus has been considerd more or less doubtful. The genus was erected by Germar in 1835† and accepted by Amyot and Serville in their work in 1843.‡ Fairmaire in 1846,§ however, claimed that the characters assigned to this genus by Germar were (in the case of the absence of a hollowing out above the scutellum) incorrect, and (in the foliaceous pronotum) insufficient for generic rank and he therefore sunk all of the species of *Stegaspis* known at that time in the genus *Lycoderes* Germ. Later, however, Walker|| and Stal¶ both recognized the genus and with our present knowledge of the group it seems advisable to accept it, at least tentatively, for convenience in systematic study.

The genus is close to *Lycoderes* Germ. and differs from that genus in that the pronotum in *Stegaspis* is more foliaceous, is less hollowed out above the scutellum and in the fact that the anterior elevation of the pronotum is never bilobed.

The characters of the genus may be briefly summarized as follows:

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[*] *Vide* Walker, List Homoptera, British Museum Supplement, p. 165.

[†] Germar, Ernst Friedrich, Species Membracidum Musei Germari et dispositio generum Membracidum. Silb. Revue entom. 1835. Tome III, 223-261 pp., et suppl., 307-311 pp.

[‡] Amyot, Charles Jean Baptiste *and* Serville, Audinet, Histoire Naturelle des Insectes—Hemipteres, Paris, 1843, p. 533, Genus 422.

[§] Fairmaire, Leon, Revue de la tribu des Membracides. Annales de la Societe entomologique de France, 1846, Ser. 2, Tome IV, p. 522.

[||] Walker, Francis, List Hom. Brit. Mus. 1851, p. 634.

[¶] Stal, Carolus, Hemiptera Fabriciana. Kongl. Svenska Vetenskaps-Akademiens Handlingar, Stockholm, 1869, Band VIII, No. 2, p. 54.

Pronotum very foliaceous and laterally flattened, recalling the genus *Membracis;* the anterior elevation extended forward before the head and projecting more or less upward, never bilobed; very little hollowed out above the scutellum; posterior process well developed, extending backward at least as far as center of body but not reaching tips of tegmina. Legs flattened; the tibiae, particularly the anterior pair, foliaceous. No suprahumeral horns. Tegmina broad, the cells reaching the margin, without a border; five apical cells and one discoidal cell.

The genus is native to the northern part of South America, all of the species having been described from Brazil, Venezuela and the Guianas. It contains at present nine species to which must be added the following:

Stegaspis viridis sp. nov.

Green; punctured; prothorax subtriangular and much flattened; posterior process just reaching internal angle of tegmina; tegmina hyaline, slightly punctured at base; head subquadrangular, somewhat foliaceous; tibiæ foliaceous.

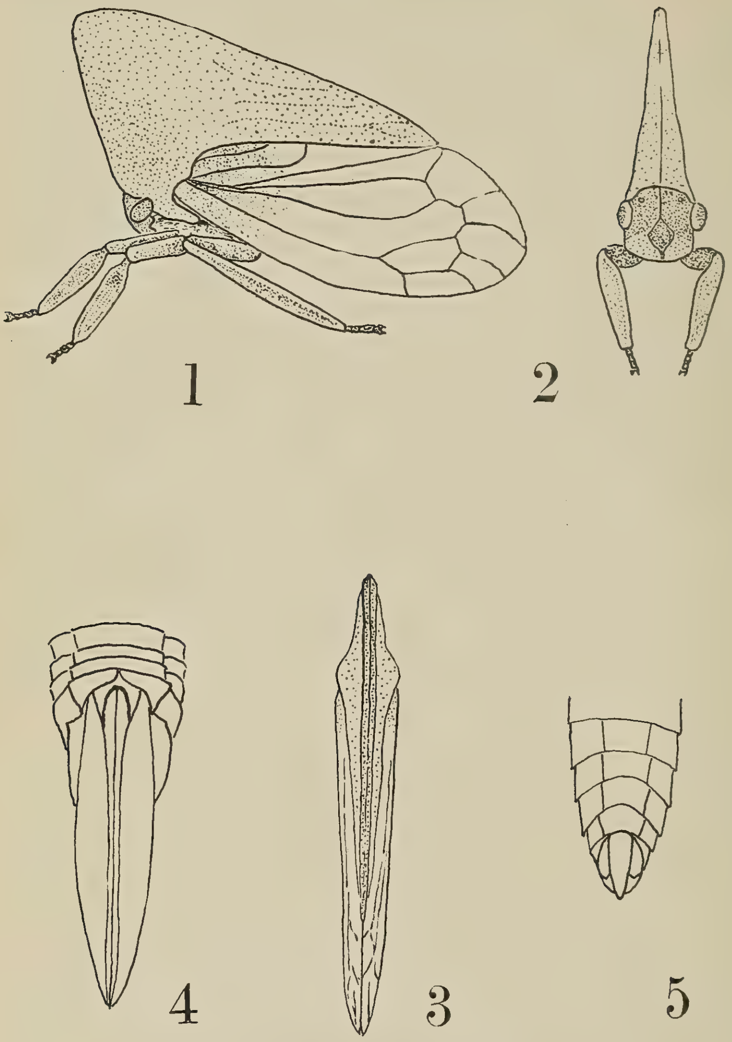
Head more or less quadrate, brown, finely punctured, not pubescent, base smooth and arcuate; eyes not at all prominent as seen from the front, greenish and opaque; ocelli pearly, much farther from each other than from the eyes and situated well above an imaginary line drawn through the center of the eyes; clypeus small, longer than wide, smooth, lateral margins partly concealed by the overlapping edges of the adjacent genæ. Genæ very large, extended, projecting downward as far as the inferior margin of the labium, carrying out the general quadrate outline of the head, very rough with minute tubercles; antennae rather long, fine and bristle-like.

Pronotum roughly triangular, much flattened, projecting upward and forward above the head, brilliant green in color, becoming yellowish in cabinet specimens, finely punctured, the punctures smaller and closer together at the anterior end than at the posterior, a smooth yellowish disk just above and behind each eye; sides of pronotum bearing two or three irregular, wavy, slightly raised lines; median carina percurrent, very distinct on anterior margin, becoming more obsolete on dorsal margin, where the tectiform ridge of the pronotum itself is very sharp; humeral angles small, not prominent; posterior process heavy, blunt, triangular, projecting beyond the extremity of the abdomen and just reaching the internal angle of the tegmen.

Tegmina entirely hyaline; base finely punctate and greenish; apex broad and much rounded, the veins extending to the margins; veins broad, well-defined, greenish.

Abdomen very light green, segments faintly margined with darker; ovipositor more than half as long as ventral length of abdomen.

Undersurface of thorax yellowish; legs yellow-ferruginous, femora



NEW MEMBRACID FROM TRINIDAD—FUNKHOUSER

slightly swollen, tibiæ much flattened, the anterior and middle pairs foliaceous; tarsi fuscous; claws brown.

Type: Female.

Measurements: Length from head to apex of tegmina 5.5 mm.; length of pronotum from anterior apex to tip of posterior process 5 mm.; width between humeral angles 1.3 mm.

Male very slightly smaller and more slender. Does not differ in color or punctuation. Abdomen much more slender and pointed than in female.

Locality: Port of Spain, Trinidad, West Indies.

Collector: R. J. Crew.

Described from two females and three males. The specimens bear no date labels. Type in author's collection, allotype and three paratypes in collection of Mr. C. E. Olsen.

Explanation of Plate.

Fig. 1. Lateral view.
Fig. 2. Front view.
Fig. 3. Dorsal view.
Fig. 4. Ventral view of abdomen (female).
Fig. 5. Ventral view of abdomen (male).

A METHOD OF SHIPPING INSECT COLLECTIONS.

By A. B. Champlain, Lyme, Conn.

During the past eight years I have moved my collection of Carabidæ five or six times, in all about six thousand miles. It has been handled by drayers and in freight warehouses, and transferred several times *en route* when shipped for long distances. I have never had a specimen damaged.

Barrels, ordinary sugar barrels obtainable from any grocer, are my receptacles. My boxes are 9 × 13 inches, on the order of Schmitt boxes. Each is wrapped separately with newspaper to prevent the dust from working in. Eight or nine are placed, one above another, on top of a cushion of excelsior. Excelsior is packed securely around each, leaving no chance for the boxes to touch the edges of the barrel. A cushion of several inches of excelsior comes on the top. A piece of burlap, tacked over the top, completes the job.

The whole article is light, easy to handle, and the safest I know anything of.

MECAPTERA OF THE NORTHEASTERN UNITED STATES.*

By Geo. P. Engelhardt, Brooklyn, N. Y.

My reason for presenting a paper on the Order Mecaptera, comprising the single family Panorpidæ—commonly known as "Scorpion-flies"—emanates from the capture last summer of several specimens of an exceedingly interesting as well as curious member of this order which found me in doubt as to its identity. Before dealing with this particular capture it seems not out of place to review briefly the several groups of Panorpidæ as represented in this part of the United States. Not very many species will have to be considered.

While most of the textbooks on North American insects place the Mecaptera as a sub-order of the Neuroptera, there is a tendency to give them ordinal rank, as has been done by the late Dr. John B. Smith in his last report on the "Insects of New Jersey," where he expresses his belief that the Mecaptera are the ancestral types from which the Hymenoptera and Diptera have developed.

In our region the order is represented by four genera, which show a striking similarity between the species of each genus, but also a dissimilarity, equally striking, between each of the genera. The first genus, *Panorpa,* contains insects, fairly large, with slender body, and narrow, net-veined wings, of normal aspect, excepting for a curious abdominal appendage, peculiar to the males, which ends in a forceps and is carried curved upward; in the second genus *Boreus* we have rather diminutive insects, scarcely reaching 1/4 inch in length with the wings in the males rudimentary and in the females entirely absent; the third genus *Bittacus* includes the largest members of the family with body, wings and legs remarkably long and slender, giving them a close resemblance to the Tipulidæ, or so-called Craneflies, of the order Diptera; the single species of the fourth and last genus *Merope* strongly suggests a cockroach, were it not for the forceps-like appendage of the male, which suggests an earwig. A character readily recognizable and present in all the members of the order is the more or less long beak with the mouth parts attached to the end.

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* Read before the New York Entomological Society, November 18, 1915.

Concerning the habits of our species it seems strange that, while the greater number are well known in the adult stage and may be encountered in fair abundance, there is no record of a complete life-history, as far as I am aware, of any species. Felt has published his observations on some very young stages of *Panorpa rufescens,* but for a full account we still must refer to the writings of Dr. Brauer of Vienna, who has recorded the life-histories of some of the European species. According to this authority, dealing with *Panorpa communis* of Europe, the male is polygamous. Four days after pairing the female lays a few eggs in a mass, situated in a shallow hole, which she bores with her long abdomen in damp earth. In a few days afterwards both male and female die. The eggs, at first white and later brown, are rather large for so small an insect. The larvæ hatch in eight days from the time the eggs are deposited. They grow very rapidly, attaining full size in about thirty days. The body is thick, fleshy, cylindrical, much like a caterpillar and beset with brown horny warts, bearing short bristles. On the last three segments are cylindrical tubercles, bearing long bristles. A point of much interest is that besides the three pairs of jointed, horny feet, the larva also has eight pairs of fleshy pro-legs, which correspond to the abdominal pro-legs of caterpillars, though the latter are not known to possess more than five pairs of such legs. The head is rounded, and not very large. In confinement the larva burrows in damp earth, an inch deep, and lives on putrid meat and bread. Pupation takes place in a cavity in the earth, the final transformation occurring about two weeks later.

In a wild state the larvæ appear to subsist chiefly on decaying animal matter. They have been observed feeding on dead or dying caterpillars, on dead flies and wasps and have been found living in ants' nests, where, unmolested by the ants, they seem to function as commensals or, more likely, scavengers. My own experience has been almost entirely with the adults. I do recollect finding larvæ at different times when turning stones and logs, or when sifting among fallen leaves but have never attempted raising them. Shady woods with a rich herbaceous undergrowth, such as boneset, nettle, etc., and moist meadows or the margins of streams and ponds appear to be their favorite habitat.

The adults of *Panorpa, Bittacus* and *Merope* may be encountered from June to September, with the greatest abundance in midsummer. The species of *Boreus,* on the other hand, have only been found from midwinter to early spring, usually leaping about on the snow. While considered rare insects, when encountered at all, they generally occur in considerable numbers.

As regards food the adults of this family are said to be predaceous upon other insects. In my own experience, without special effort at investigation, I have found species of *Panorpa* feeding during the day on decaying fruit and on molasses applied to trees for the purpose of attracting moths at night. However, it is safe to state that as adults or larvæ they are of no economic importance. Some of the species, especially of *Panorpa,* emit through the beak a dark colored fluid of disagreeable odor and, probably, disagreeable taste, which may serve as a protection against attack.

In the New Jersey "Report on Insects" eleven species are credited to the order, five lacking definite locality and date. Further research no doubt will add considerably to this rather small number; yet, even as it stands, the list represents at least a beginning. The following list, incomplete as it must be, of the Panorpidæ of the Eastern United States, should be of service, if for no other purpose, than to call attention to its incompleteness, for there certainly is in this family a fine field for interesting and original work. I have consulted my own material, the collection in the Brooklyn Museum, the Am. Museum of Natural History, that of Mr. William T. Davis and Mr. E. L. Dickerson. The review of the Panorpidæ of America North of Mexico by James S. Hine has served as a basis and a number of species without definite locality and date are cited on this authority alone.

Genus Panorpa Linnaeus.

My own material as well as that in the collection of the Brooklyn Museum has, for the greater part, been determined by Mr.

Nathan Banks, who also has named a number of species for Mr. Davis, Mr. Dickerson and the American Museum of Natural History.

1. **Panorpa maculosa** Hagen.

N. Y., Pa. (Hine); Pleasant Valley, Litchfield Co., Conn., VIII, 1, 1915; Claremont, N. H., VIII, 10, 1911; Newfoundland, N. J., V, 30, 1910 (Engelhardt); West Point, N. Y., V, 13; Newfoundland, N. J., V, 30, 1910; Ramapo Mts., N. Y., VII, 12; (Schaeffer, Brooklyn Mus. Coll.); Catskill Mts., N. Y., VII, 26, 1907; Stowe, Vt., VI, 30, 1913 (Engelhardt, Brooklyn Mus. Coll.); Essex Falls, N. J., VI, 14, 1910 (Nicolay, Brooklyn Mus. Coll.); Staten Island, N. Y., VI, 5–24; Newfoundland, N. J., V, 1899; Hopatcong, N. J., VII, 4, 1908; Red Rock, Luzerne Co., Pa., IX, 1, 1909; Long Wood Valley, N. J., V, 25, 1910; Nyack, N. Y., VI, 11; Berkshire Co., Mass., VII, 1888; Hewitt, N. J., VII; Jamesburg, N. J., VII, 2; Ft. Montgomery, N. Y., V, 31, 1908 (Davis); Rock City, N. Y., VI, 9, 1915; Bear Swamp, Ramsay, N. J., VII, 10, 1910; Lake George, N. Y., VII, 10, 1907; Rockaway, N. J., VI, 17, 1908; New Brunswick, N. J., VII, 19; Plainfield, N. J., VI, 27; Lake Hopatcong, N. J., VII, 6 (Am. Mus. Coll.); Chester, N. J., VIII, 13 (E. L. Dickerson).

2. **Panorpa nebulosa** Westwood.

Pa., N. Y., (Hine); Yaphank, L. I., N. Y., VI, 20, 1911; Gt. Barrington, Mass., VI, 20, 1910 (Engelhardt); Sterling Forest, N. Y., V, 30 (Schaeffer, Brooklyn Mus. Coll.); Staten Island, N. Y., VI, 26, 1906; West Point, N. Y., VI, 16, 1913; Yaphank, L. I., N. Y., VII, 25, 1908; Pinelawn, L. I., N. Y., VI, 15, 1907; Lakewood, N. J., VI, 26; Jamesburg, N. J., VI, 22; Newfoundland, N. J., VII, 4, 1903; Ramapo, N. Y., VI, 12; Half Way Hollow Hills, L. I., N. Y., VII, 2, 1910 (Davis); Blue Hills, Mass.; Boston, Mass.; Aston, Adirondack Mts., N. Y., VI, 12–19, 1901; Nyack, N. Y., VII, 2, 1883; Milltown, N. J., VI, 14; New Brunswick, N. J., VII, 19; Guymard, N. J., VI, 9, 1910; Bear Swamp, Ramsay, N. J., VII, 10, 1910 (Am. Mus. Coll.).

3. **Panorpa banksii** Hine.

Type specimen from Sea Cliff, L. I., N. Y. (Hine).

4. **Panorpa latipennis** Hine.

N. Y. (Hine); Stowe, Vt., VI, 30, 1913 (Engelhardt, Brooklyn Mus. Coll.); Hewitt, N. J., VI, 18, 1904 (Davis); Whiteface Mtn., Adirondack Mts., N. Y., VII, 10, 1914; Rock City, N. Y., VI, 9, 1915; Aston, Adirondack Mts., N. Y., VI, 12, 1901 (Am. Mus.).

5. **Panorpa subfurcata** Westwood.

N. Y., N. H. (Hine); Pleasant Valley, Litchfield Co., Conn., VII, 1, 1915; Claremont, N. H., VI, 28, 1912 (Engelhardt); Pine Island, N. Y., VI, 19, 1912 (Schaeffer, Brooklyn Mus. Coll.); Stowe, Vt., VI, 22–30, 1913; Pittsfield, Vt., VII, 6, 1913 (Engelhardt, Brooklyn Mus. Coll.); Central, Pa., IX, 8, 1909; Ramsay, N. J., VI, 23, 1912; Hewitt, N. J., VI, 18, 1904; Ramapo, N. Y., VI, 12; Sullivan Co., N. Y., IX; McLean, N. Y., V, 25, 1915 (Davis); Brookfield, Conn., VII, 27 (Dickerson).

6. **Panorpa signifer** Banks.

Pa., N. Y. (Hine); East Jewett, Catskill Mts., N. Y., VIII, 7, 1914; Red Rock, Luzerne Co., Pa., IX, 6, 1909; Whiteface Mtn., Adirondack Mts., N. Y., VII, 13, 1914 (Davis).

7. **Panorpa venosa** Westwood.

N. J., Pa., Md. (Hine); White Mills, Wayne Co., Pa., VIII, 2, 1909 (Doll, Brooklyn Mus. Coll.); Sparta, N. J., VII, 1886; Ramapo, N. Y., V, 31; Jamesburg, N. J., VII, 5; Dennisville, N. J., IX, 5, 1908; Staten Island, N. Y., VII–IX; Lakehurst, N. J., IX, 24; Elk Grove, Pa., IX, 9, 1909; Cold Spring, L. I., N. Y., VIII, 10, 1900; Promised Ld., L. I., N. Y., IX, 4, 1910; Yaphank, L. I., N. Y., VII, 1909; Pinelawn, L. I., N. Y., VIII, 11 (Davis); White Mts., N. H.; Axton, Adirondack Mts., N. Y., VI, 12, 1911 (Am. Mus. Coll.).

8. **Panorpa confusa** Westwood.

Pa., N. Y., Md., Mass. (Hine); Ft. Montgomery, N. Y., VII, 26, 1907; Long Island, N. Y., 1907 (Engelhardt); Manchester, Mass.; New Brunswick, N. J., VII, 19 (Am. Mus. Coll.); Husted, N. J., VIII, 27 (Dickerson).

9. **Panorpa rufescens** Rambur.

N. Y., N. J., Pa., Md. (Hine); Pleasant Valley, Litchfield Co., Conn., IX, 5, 1915; Stowe, Vt., VI, 22, 1913; Amagansett, L. I., N. Y., VIII, 10, 1912; Yaphank, L. I., N. Y., VII, 20, 1910, VI, 20, 1911 (Engelhardt); Catskill Mts., N. Y., VII, 26, 1907 (Engelhardt, Brooklyn Mus. Coll.); Staten Island, N. Y., VI–VIII; Little Falls, N. J., VIII, 13, 1898; Buckabear Pond, N. J., VII, 3, 1896; Croton, N. Y., VI, 25, 1899; Palisades, N. J., VIII, 22; Hewitt, N. J., VII; Ramapo, N. Y., VIII, 31; Ramsay, N. J., VII, 19, 1908; Lakehurst, N. J., VI, 27; Elk Grove, Pa., IX, 9, 1909; Nyack, N. Y., VI, 11; Cold Spring, L. I., N. Y., VII, 19, 1900; Yaphank, L. I., N. Y., VII, 25, 1908 (Davis); Flatbush, Brooklyn, N. Y., VII, 7, 1897; Branford, Conn., VIII, 4, 1905; New Brunswick, N. J., VII, 19; Lake Hopatcong, N. J., VII, 6; Alpine, N. Y., VII, 25, 1910 (Am. Mus. Coll.); Chester, N. J., VIII, 13 (E. L. Dickerson).

10. **Panorpa canadensis** Banks.

Mt. Washington, N. H. (Hine); Adirondack Mts., N. Y., VIII, 1897 (Davis).

Genus Boreus Latreille.

1. **Boreus nivoriundus** Fitch.

N. Y. (Hine); Ithaca, N. Y., XII, 18, 1898 (Am. Mus. Coll.).

2. **Boreus brumalis** Fitch.

N. Y. (Hine); Clove Valley, S. I., N. Y., XII, 17, 1887, on snow (Davis); Weston, Mass., I, 17, 1915 (Mead, Brooklyn Mus. Coll.); Sea Cliff, L. I., N. Y. (Banks, Am. Mus. Coll.).

That not more records of *Boreus* in the vicinity of New York have been obtained is because they have not been searched for at the right season.

Genus Bittacus Latreille.

1. **Bittacus apicalis** Uhler.

N. Y. (Hine).

2. **Bittacus occidentalis** Walker.

Del., Pa., Md. (Hine); Cranford, N. J., VII, 27 (Davis); High Island, Md., VIII (Am. Mus. Coll.).

3. **Bittacus stigmaterus** Say.

Md., N. Y. (Hine).

4. **Bittacus pilicornis** Westwood.

Md., N. Y. (Hine).

5. **Bittacus strigosus** Hagen.

Mass., N. Y., Pa. (Hine); Hemlock Falls, N. J., VI, 8, 1902; Staten Island, N. Y., VII, 8–15, 1905; Cold Spring, L. I., N. Y., VII, 27, 1900 (Davis); Floral Park, L. I., N. Y., VI, 13, 1913 (Thurston, Davis Collection); Ithaca, N. Y., VIII, 1914; Pleasant Valley, Litchfield Co., Conn., VIII, 1, 15; High Ridge, Conn., VII, 18, 1915; Stowe, Vt., VI, 30, 1913, at light; Queens, L. I., N. Y., VII, 1907; North Hector, N. Y., VIII, 1914 (Engelhardt); West Farms, New York City; Roxbury, Pa., VIII (Am. Mus. Coll.).

This species, when looked for in shady, moist woods, especially near the margins of brooks and streams is quite common. By its slow, irregular flight, after a little experience, it can be readily distinguished from the Tipulidæ.

Genus Merope. Newman.

Merope tuber Newman.

Me., Pa., N. Y. (Hine); Pleasant Valley, Litchfield Co., Conn., VII, 1, VIII, 1, IX, 5, 1915, three females at light (Engelhardt); Black Mountains, N. C. Male at light (Schaeffer, Brooklyn Mus. Coll.); Chester, N. J. (Dickerson).

An interesting account of this singular insect, described by Newman in 1838, is given by Dr. Asa Fitch in the 14th Report of the New York State Agricultural Society. The first specimen was taken by Doubleday at Trenton Falls, N. Y., in 1837. Subsequently it was reported by Hagen, 1861, from Berkeley Springs, W. Va., and Pa. Fitch captured three specimens at Salem, N. Y., the first, a female, VII. 16. 1853, the second, a male, VII. 28. 1871, and the third a female VIII. 24. 1877. The largest number of specimens have been taken in the vicinity of Washington, D. C. The most southern record at present is Black Mts., N. C. (Schaeffer) and the most northern Orono, Me. (Hine). With few exceptions, all specimens were captured at light. Though placed with the Panorpidæ, the question whether this species really belongs there is still in doubt. The record for Connecticut appears to be the first one for that state.

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